

# Hinkley-Seabank project: decision on delivery model

## Decision

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### Overview:

This document sets out our decision that National Grid Electricity Transmission should be funded to deliver the Hinkley-Seabank electricity transmission project through a regulatory delivery model that seeks to replicate the outcome of an efficient competitive process for the financing, construction and operation of the project. We refer to this mechanism as the Competition Proxy model.

Under the Competition Proxy model we will apply a specifically determined cost of capital, derived using a methodology (which has been updated following consideration of responses to our January minded-to consultation) to determine the allowed revenue for delivering Hinkley-Seabank over the period of its construction and 25 years of operation. National Grid Electricity Transmission will receive a project-specific revenue allowance to deliver Hinkley-Seabank that reflects the arrangements set out in this document and with a cost of capital derived through the methodology published alongside this decision in CEPA's updated report.

# Context

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The GB onshore electricity transmission network is currently planned, constructed, owned and operated by three transmission owners (TOs): National Grid Electricity Transmission (NGET) in England and Wales, SP Transmission in the south of Scotland, and Scottish Hydro Electric Transmission in the north of Scotland. We regulate these TOs through the RIIO (Revenue = Incentives + Innovation + Outputs) price control framework. For offshore transmission, we appoint offshore transmission owners (OFTOs) using competitive tenders.

The incumbent onshore TOs are currently regulated under the RIIO-T1 price control, which runs for eight years until 2021. Under this price control, we developed a mechanism for assessing the need for, and efficient cost of, large and uncertain electricity transmission reinforcement projects. This mechanism is called 'Strategic Wider Works' (SWW). The incumbent TOs are funded to complete pre-construction works through the RIIO-T1 baseline allowance. Once the need for and costs of projects have become more certain, the TOs bring forward construction proposals and seek funding for them. As part of our decision on the RIIO-T1 price control, we set out that projects brought to us under the SWW regime could be subject to competition.

Following our decision on the RIIO-T1 price control, we undertook the Integrated Transmission Planning and Regulation (ITPR) project, which reviewed the arrangements for planning and delivery of the onshore, offshore and cross-border electricity transmission networks in GB. Through this project we decided, among other decisions, to increase the role of competition where it could bring value to consumers.

Following the ITPR project, we set up the Extending Competition in Transmission (ECIT) project in early 2015 to introduce additional competition in the delivery of *new, separable and high value* onshore electricity transmission investment. We have published a series of ECIT policy consultation and decision documents, which are available on our website.

In June 2017 we published an update on our plans to introduce competition to onshore electricity transmission, stating that we were deferring further development of the Competitively Appointed Transmission Owner (CATO) regime until the timing of the necessary legislation was more certain. We reiterated that we continued to consider that there were significant benefits to consumers in introducing competition into the delivery of new, separable and high value onshore electricity transmission projects.

Our August 2017 consultation on the Hinkley – Seabank project outlined two potential delivery models which we considered could deliver a significant proportion of the benefits of a CATO tender. Having reviewed the responses to that consultation, and completed further analysis, we set out in January 2018 that, of the two models identified in our August 2017 consultation, we were minded-to implement the Competition Proxy Model for the Hinkley – Seabank project. We explained why we thought this would deliver savings relative to the status quo SWW approach and set out indicative cost of capital ranges that we would allow. This document explains our decision on the delivery model for HSB following consideration of consultation responses.

# Associated documents

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Hinkley - Seabank: Minded-to consultation on delivery model, January 2018

<https://www.ofgem.gov.uk/publications-and-updates/hinkley-seabank-minded-consultation-delivery-model>

Update on competition in onshore electricity transmission, January 2018

<https://www.ofgem.gov.uk/publications-and-updates/update-competition-onshore-electricity-transmission>

Hinkley - Seabank: Decision on the Needs Case, January 2018

<https://www.ofgem.gov.uk/publications-and-updates/hinkley-seabank-decision-needs-case>

Hinkley - Seabank: Consultation on Final Needs Case and potential delivery models, August 2017

<https://www.ofgem.gov.uk/publications-and-updates/hinkley-seabank-consultation-final-needs-case-and-potential-delivery-models>

Update on Extending Competition in Transmission, June 2017

<https://www.ofgem.gov.uk/publications-and-updates/update-extending-competition-transmission>

Extending competition in electricity transmission: arrangements to introduce onshore tenders, October 2015

<https://www.ofgem.gov.uk/publications-and-updates/extending-competition-electricity-transmission-proposed-arrangements-introduce-onshore-tenders>

Criteria for onshore transmission competitive tendering, May 2015

<https://www.ofgem.gov.uk/publications-and-updates/criteria-onshore-transmission-competitive-tendering>

Integrated Transmission Planning and Regulation project: Final Conclusions, March 2015

<https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions>

Strategic Wider Works Guidance, June 2013 (updated November 2017)

<https://www.ofgem.gov.uk/publications-and-updates/guidance-strategic-wider-works-arrangements-electricity-transmission-price-control-riio-t1-0>

# Contents

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<b>Executive Summary</b>	<b>6</b>
The Hinkley-Seabank Project	6
Further detail on the Competition Proxy delivery model	9
Interactions with other policy areas	10
<b>1. Introduction, background and summary of the decision</b>	<b>11</b>
The Hinkley-Seabank project	11
Strategic Wider Works and the extension of competition	11
Our August 2017 consultation	12
Our January 2018 minded-to consultation	13
Analysis from CEPA	13
Summary of our decision and what this document covers	13
<b>2. Our view on the key consultation responses and updated benefits analysis</b>	<b>16</b>
Benefits of the Competition Proxy Model identified in minded-to consultation	16
Responses to our minded-to consultation and our views	16
That the implementation of CPM to the HSB project during the RIIO-T1 period constitutes an inappropriate reopening of the Price Control	17
That the CPM has not been developed to a sufficient level of detail, and as a result, cannot be considered a viable investment opportunity	18
That the bottom-up approach of setting a cost of capital for the construction and operational phases has not been sense-checked to show that it produces an overall level of project return that would be attractive to investors.	19
That the operational phase rates that have been benchmarked against the OFTO regime assume a project finance approach, which would incur additional costs.	21
Whether the project is able to gain an investment grade credit rating	23
Comparability of benchmarks	24
That there are material inconsistencies and errors within CEPA's analysis to derive indicative cost of capital rates for the HSB project	25
Additional key challenges from NGET on methodology for setting the HSB cost of capital ranges	25
Updates to our minded-to consultation benefits analysis	28
Sensitivity testing on capital and operational costs	31
<b>3. The Competition Proxy Model for HSB</b>	<b>33</b>
Financing arrangements	33
Setting the allowed cost of capital rates	34
Allowed revenue during the construction period	34
Adjustments for inflation	35
Project Assessment, annual reporting and Post-Construction Review	35
Project Assessment (PA)	35
Annual Reporting	36
Post-Construction Review (PCR)	37
The Sharing Factor	38
Treatment of late delivery	38
Arrangements during the operational period	39
Opex	39
Incentives	39
Cost reopeners	40
Allowance for tax liabilities	40
Identifying HSB costs	40

Treatment of work that doesn't meet the criteria for competition	41
<b>4. Next steps for implementation</b>	<b>42</b>
<b>Appendices</b>	<b>42</b>
<b>Appendix 1 – Overview of Cost of Capital methodology</b>	<b>43</b>
Methodology and indicative results	43
<b>Appendix 2 –Final Impact Assessment template</b>	<b>45</b>
<b>Appendix 3 – Comparison of risk allocation: OFTO &amp; HSB</b>	<b>50</b>

# Executive Summary

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## The Hinkley-Seabank project

The Hinkley-Seabank project (HSB) is an electricity transmission project to connect EDF's Hinkley Point C nuclear power station to the GB transmission network. HSB has been progressed through the planning process by National Grid (NGET) as the transmission owner (TO) for England and Wales. The capital cost of the project is currently estimated by NGET at close to £650m.<sup>1</sup>

In January 2018 we published our Final Needs Case decision on HSB. That decision confirmed that we agree that the project is needed, and that efficient costs will be recoverable from consumers under the final regulatory arrangements for the project (referred to as the "delivery model" in this document).

## January-2018 minded-to consultation

In January 2018, we consulted on our minded-to position to implement the "Competition Proxy Model" (CPM) as the delivery model for the HSB project. We said that doing this would unlock significant savings for consumers in comparison with the status quo Strategic Wider Works (SWW) approach under RIIO. We set out our expectation that the CPM would drive these savings by reflecting the current low cost of debt available in the market, locking in low long-term debt and equity returns throughout the operational period and allowing for a higher level of gearing than would be appropriate across NGET's wider portfolio of price control assets under RIIO.

The minded-to consultation confirmed that, aside from a relatively short section of overhead conductor replacement, we considered that the HSB project met the criteria for competition, in that it involves new, separable and high value transmission assets.<sup>2</sup>

Our analysis was supported by consultants Cambridge Economics Policy Associates (CEPA), which provided a report that proposed a methodology for setting the appropriate cost of capital for the construction and operational phase of new, separable and high value onshore electricity transmission assets, such as HSB.

## Our decision

Following consideration of the responses we received to our minded-to consultation, updated information on the RIIO counterfactual, further discussions with NGET and the other TOs, and additional analysis from ourselves and independent consultants, **we have decided to apply the CPM to the HSB project.**

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<sup>1</sup> This figure represents our latest understanding of NGET's estimate of the capital costs of the project. The £800m total referenced in the minded-to consultation was based on our previous understanding of NGET's estimate, which included additional project costs that are funded through baseline funding as pre-construction costs (see para. 1.4) or via previous price control determinations.

<sup>2</sup> See paragraph 2.6 of minded-to consultation:  
[https://www.ofgem.gov.uk/system/files/docs/2018/01/hsb\\_condoc\\_delivery\\_model.pdf](https://www.ofgem.gov.uk/system/files/docs/2018/01/hsb_condoc_delivery_model.pdf)

**As part of our decision, we confirm that we intend to apply the methodology developed by CEPA and published alongside this document to determine the allowed cost of capital for HSB.**

This document sets out the detailed reasoning and justification for our decision. It also sets out the areas where we have made changes to the CPM methodology for HSB that we presented in our minded-to consultation (and that was set out in CEPA's report, published as a subsidiary document). We made these changes in response to points raised through consultation, further to which we carried out a thorough review of the methodology for setting the cost of capital for the project. We have also carried out additional cross-checks of the cost of capital (both for the project overall and the separate construction and operational periods) to validate and quality assure our analysis.

This document provides, in Chapter 3, information on the regulatory arrangements that will underpin the CPM.

### **Updated methodology and consumer savings analysis**

#### *Updated methodology*

We have updated our analysis and methodology for setting the appropriate cost of capital for the construction and operational phase of new, separable and high value onshore electricity transmission assets, such as HSB. CEPA has produced an updated report (published as a subsidiary document to this decision) which sets out its supporting analysis, and highlights the adjustments made to the cost of capital methodology for HSB to reflect its consideration of the responses received to the consultation.

The adjustments to the HSB cost of capital methodology have led to an increase to both the top and bottom of the estimated cost of equity range during construction, as well as an increase to the bottom of the estimated cost of debt range for construction. Full details on these changes can be found in Chapter 2 of this document and in CEPA's updated report published alongside this document.

The table below sets out our estimated ranges for the cost of capital during construction and operations phases for HSB. These figures and ranges are presented as estimates based on evidence up to the point at which CEPA started its original analysis.<sup>3</sup> When we set the revenue allowance for HSB (currently expected to be in early 2019), we will use inputs for the methodology which reflect market conditions prevailing at that time. This is explained further in 'Next steps' below.

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<sup>3</sup> The figures in this table reflect CEPA's view of the rates if they had been set in September 2017, when the original data was sourced.

## Summary of estimates for cost of capital during construction and operation of HSB

		Construction cost of capital (WACC)			
		Updated Low	Updated High	January Low	January High
Cost of debt	nominal	2.70%	2.80%	1.85%	2.80%
Gearing	nominal	37.50%	37.50%	37.50%	37.50%
Post-tax cost of equity	nominal	5.79%	8.81%	5.54%	7.57%
<b>Pre-tax nominal WACC</b>		5.48%	7.85%	4.97%	6.89%
Vanilla nominal WACC		4.63%	6.56%	4.16%	5.78%
<b>Vanilla RPI-real WACC</b>		<b>1.58%</b>	<b>3.45%</b>	<b>1.12%</b>	<b>2.70%</b>
Vanilla CPI-real WACC		2.58%	4.47%	2.11%	3.71%

		Operational cost of capital (WACC) <sup>4</sup>			
		Updated Low	Updated High	January Low	January High
Cost of debt	nominal	3.00%	3.25%	3.50%	3.75%
Gearing	nominal	85.00%	80.00%	85.00%	80.00%
Post-tax cost of equity	nominal	7.00%	8.50%	7.00%	9.00%
<b>Pre-tax nominal WACC</b>		3.85%	4.70%	4.27%	5.22%
Vanilla nominal WACC		3.60%	4.30%	4.03%	4.80%
<b>Vanilla RPI-real WACC</b>		<b>0.19%</b>	<b>1.26%</b>	<b>0.60%</b>	<b>1.75%</b>
Vanilla CPI-real WACC		1.57%	2.25%	1.99%	2.75%

### *Updated view on consumer savings*

We have updated our consumer benefit analysis to reflect the adjustments to the estimated cost of capital ranges for HSB set out above.

We have also updated our consumer benefit analysis by changing the RIIO counterfactual cost of capital ranges to which we are comparing the HSB ranges. We have changed the RIIO counterfactual because in March 2018 we published indicative cost of capital ranges for the RIIO-2 price control period.<sup>5</sup> We consider these indicative ranges to be a suitably challenging counterfactual against which to test our estimated HSB cost of capital ranges. These RIIO counterfactual figures should not be read as any confirmation of the rates applicable for RIIO-2.

<sup>4</sup> The adjustments in the table to the operational WACC from January reflect our policy decision to not lock in the rates for the operational period for the duration of construction. A 50bps increase in the cost of debt, and high end of the equity range was included to cover this in January, but is no longer relevant.

<sup>5</sup> <https://www.ofgem.gov.uk/publications-and-updates/riio-2-framework-consultation>



In our minded-to consultation we explained that our analysis suggested that savings to consumers of over £100m would be possible through implementation of the CPM for HSB. Our updated analysis suggests that the indicative saving to consumers from implementing CPM for HSB is £50-100m (in Net Present Value terms over the duration of the revenue term).

As explained in detail later in this document, there is inherent uncertainty around future regulatory arrangements over the period where revenue will be recovered for HSB. This is due to wider uncertainty around future market conditions. For this reason, the above savings range is provided as an illustration only. Nevertheless, we consider that this illustrative range represents, in both absolute and percentage terms, a clear indication that the implementation of the CPM for HSB is likely to yield savings to consumers, even when future market movements are considered.

### **Further detail on the Competition Proxy delivery model**

Alongside the reasoning and analysis on which our decision is based, this document provides an update on the regulatory arrangements under CPM for HSB.

Specifically we confirm:

- that the project will be funded through a fixed<sup>6</sup> 25-year revenue term following construction, with some revenue during construction to cover servicing debt during the construction period;
- the approach that we will use to set the allowed cost of capital for the construction and operational periods;
- our considered view of how the efficient capital and operational cost allowances for the project will be set through the up-front Project Assessment<sup>7</sup> and Post-Construction Review;
- the inclusion of a 'sharing factor' incentive to incentivise NGET to minimise capital costs; and
- further details on the treatment of risks, for example in relation to high impact, low probability events.

We set out in our January minded-to consultation that we considered that the CPM arrangements we were proposing would be seen by potential investors as attractive and that the project would be able to achieve a project-specific investment-grade credit rating. As set out in Chapter 2, in view of comments in consultation responses around whether such a credit rating would be achievable, we further considered the CPM regulatory arrangements against the indicative guidance of the credit rating agencies and compared the arrangements to those of the OFTO regime, under which OFTOs have been able to achieve investment grade credit ratings. Having conducted this analysis, we still consider that the CPM arrangements are sufficiently attractive such that HSB would be able to achieve an investment grade rating during construction and operation at the level set out in the cost of capital methodology.

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<sup>6</sup> Subject to regulatory protections during the operational period.

<sup>7</sup> This is our cost assessment process which sets the efficient costs for delivering the project.

## **Interactions with other policy areas**

CEPA's work on new, separable and high-value onshore transmission projects (with particular reference to HSB) is part of wider analysis it has been providing to us. This wider analysis feeds into our work to align the methodology that we use for calculating appropriate rates of return across offshore, interconnector and new, separable and high-value onshore transmission projects. CEPA's updated methodology for determining cost of capital during construction (referred to as Interest During Construction "IDC") for offshore and interconnector developers has been published at the same time as this.

We also publish the RIIO-2 Framework Decision today. The Framework Decision does not provide an update on the cost of capital range that was included in the Framework Consultation for in March. It does, however, confirm the use of the high level methodology Capital Asset Pricing Model (CAPM) that was proposed in the Framework Consultation.

## **Next steps**

Based on NGET's currently proposed timescales for submitting cost estimates, we anticipate running our Project Assessment process for HSB from August 2018 to early 2019. As part of that process we will:

- review NGET's capital and operational cost estimates for HSB;
- consult on and finalise our view of appropriate ex-ante cost allowances;
- consult on and finalise which areas of capital and operational cost will be subject to the Post Construction Review; and
- re-run the analysis in the methodology for setting the cost of capital for HSB to adjust for contemporary market rates and consult on the final point within the cost of capital range that we will set for HSB.

In parallel, we will develop and consult on licence modifications to enact the CPM as a regulatory delivery model. We anticipate consulting on the licence modifications from late autumn 2018. In early 2019 we will also consult on modifications to NGET's licence to reflect its cost allowances for HSB.

# 1. Introduction, background and summary of the decision

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## **The Hinkley-Seabank project**

1.1. The Hinkley-Seabank project (HSB) is an electricity transmission project to connect EDF's Hinkley Point C (HPC) nuclear power station to the GB transmission network. HSB has been progressed through the planning process by National Grid Electricity Transmission (NGET) as the transmission owner (TO) for England and Wales. NGET currently estimates the capital cost of the project at close to £650m. NGET plans to start construction in early 2019 in order to meet EDF's 2024 connection date for HPC.

1.2. In January we published our Needs Case decision on HSB. That decision confirmed the need for the project, and that efficient costs will be recoverable from consumers under the final regulatory arrangements for the project (referred to as the "delivery model" within this document).

## **Strategic Wider Works and the extension of competition**

1.3. We set revenues for the majority of NGET's TO activities periodically through price controls. HSB was not included within the baseline funding for the current price control period, RIIO-T1. This was due to uncertainty, at the time RIIO-T1 was set, about the project's economic need, scope, and final costs. HSB instead qualifies as a Strategic Wider Works (SWW) project within the RIIO framework.

1.4. Through the SWW mechanism we can allow additional funding to be provided during RIIO-T1 for the construction of large electricity transmission reinforcement projects. We only allow such funding where we consider that it is in the interests of consumers to do so. For each SWW project, we carry out a project-specific assessment of need and of costs. We set cost allowances and then apply the prevailing RIIO financial arrangements to determine the allowed revenue. These cost allowances do not include funding for pre-construction activities. Pre-construction activities are funded through the baseline RIIO-T1 price control funding arrangements.

1.5. As part of our RIIO-T1 final proposals we confirmed that all SWW projects, such as HSB, could be considered for delivery through a competitive process.

1.6. Subsequently, we undertook the Integrated Transmission Planning and Regulation (ITPR) project.<sup>8</sup> Amongst other considerations, ITPR reviewed the arrangements for planning and delivering the onshore electricity transmission

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<sup>8</sup> <https://www.ofgem.gov.uk/publications-and-updates/integrated-transmission-planning-and-regulation-itpr-project-final-conclusions>

networks in GB. In our March 2015 ITPR Final Conclusions we decided to increase the role of competition where it can bring value to consumers.

1.7. We set up the Extending Competition in Transmission (ECIT) project in early 2015 to implement the ITPR conclusions on competition. In May 2015,<sup>9</sup> GEMA decided that we would seek to introduce additional competition into the delivery of onshore electricity transmission investments that are new, separable, and high value (our “criteria for competition”). Through 2015 and 2016 we developed the definitions of those criteria for competition. We also developed the policy and processes for a Competitively Appointed Transmission Owner (CATO) regime.

1.8. We have been working with Government to introduce legislation which is needed to enable the CATO regime. In June 2017 we published an update on this work. This update noted that an opportunity to introduce the required legislation looks unlikely in the immediate future and that we have paused our work on the CATO model.

1.9. We remain committed to working with Government to seek an appropriate opportunity to introduce the legislative change necessary to implement the CATO regime. We intend, once the timing of the necessary legislation is clearer, to take forward further development of the CATO model.

## Our August 2017 consultation

1.10. In August 2017 we consulted on our view that introducing a competitive process to the delivery of HSB, or seeking to replicate the outcome of doing so, could deliver significant benefits to consumers. We also explained that, based on its current delivery dates, we did not consider the project appropriate for our CATO regime. This was due to the delay to the necessary legislation. Waiting for this legislation could lead to significant delays to the project, which would not be in consumers’ interests if it led to a delay to HPC.

1.11. In place of CATO, we identified two alternatives to the RIIO (SWW) status quo delivery model which we consider do not require legislation to implement but can be accommodated by the existing licensing framework. In our August consultation we set out that both of these delivery models could deliver a significant proportion of the benefits of a CATO tender relative to the status quo RIIO approach. These models were referred to as:

1. **The SPV model:** Under this model NGET run a competitive process (with Ofgem oversight) to appoint a special purpose vehicle (SPV) to build, finance and operate HSB.
2. **The Competition Proxy model:** Under this model we set a revenue allowance for NGET to deliver the project based on the expected outcome of a competitive process to build, finance and operate HSB.

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<sup>9</sup> <https://www.ofgem.gov.uk/publications-and-updates/criteria-onshore-transmission-competitive-tendering>

## **Our January 2018 minded-to consultation**

1.12. Following consideration of responses to the August consultation we further developed our analysis and, in January 2018, consulted on a minded-to position that the CPM regulatory delivery model should be applied to the HSB project.

1.13. In that consultation we identified a potential saving of over £100m from implementing CPM for the HSB project. This was based on analysis we carried out on the savings delivered through proposed cost of capital (WACC) ranges for the construction and operational periods of the project. These WACC ranges were supported through the analysis of our independent consultants, Cambridge Economic Policy Associates (CEPA).

1.14. We explained that, overall (ie across a range of future projects), we expect the SPV model has the potential to deliver a greater level of benefits compared to the CPM. This is due to the further potential of that model to reduce capital and operational costs, eg through encouraging the broadening of the supply chain and increasing innovation in the project's delivery. However, we concluded that, in the case of HSB, there was significant uncertainty as to whether NGET would ensure that the SPV arrangements are set up and implemented in the optimum manner to ensure that the full range of savings are delivered by the model.

1.15. In this context we considered the CPM to be the best available regulatory delivery model to ensure consumer benefit is secured in the delivery of HSB.

### **Analysis from CEPA**

1.16. As set out above, our January consultation was supported by work from CEPA. CEPA provided a proposed methodology for determining the cost of capital ranges for the CPM.

1.17. This work formed one part of a wider piece of work that CEPA has carried out to feed into our work aligning the framework we use to set the cost of capital across the various network assets we regulate. Alongside the January minded-to consultation, we published CEPA's report, which also covered its proposed cost of capital ranges for the development of both new interconnectors and new offshore transmission infrastructure during construction, as well as the appropriate ranges for the construction and operation of new, separable and high-value onshore transmission projects (with particular reference to HSB).

## **Summary of our decision and what this document covers**

1.18. Following consideration of responses to our January minded-to consultation, and following further quality assurance and critical review, we have worked with CEPA to consider updates to the methodology for determining the cost of capital for high-value onshore transmission projects (prepared with particular reference to HSB).

1.19. CEPA has produced an updated report (published as a subsidiary document to this consultation) which sets out the adjustments to its analysis that it has made to

reflect its consideration of the responses received to the consultation, and the wider processes it has used to validate and quality assure the analysis.<sup>10</sup>

1.20. Following consideration of the responses we received to our minded-to consultation, updated information on the RIIO counterfactual, further discussions with NGET and the other TOs, and additional analysis from ourselves and independent consultants, **we have decided to apply the CPM to the HSB project.** As part of our decision, we confirm that **we intend to apply the methodology developed by CEPA and published alongside this document to determine the allowed cost of capital for HSB.**

1.21. These savings are driven by the setting of a cost of capital that reflects the following key factors:

- **Historically low Cost of Debt:** Due to the embedded debt held by Transmission Owners, a 10-year trailing average cost of debt<sup>11</sup> is used within RIIO price controls. This means that under the current RIIO-T1 price control, the current historically low cost of debt would only be captured through a trailing average cost of debt, which delays these savings being passed on to consumers. Under CPM, a large proportion of the debt can be locked-in upfront at the current market rates, directly driving savings for consumers. This is due to the lack of embedded debt related to HSB as a new project.
- **Efficient gearing level:** Evidence from the OFTO regime, interconnectors, and Private Finance Initiative (PFI)/Public-Private Partnership (PPP) projects suggest that a higher gearing (ratio of debt to equity) than the notional 60% assumed in NGET's price control is more appropriate for new, high-value, separable infrastructure projects. As the market rates for debt are currently low and debt is normally cheaper than equity, the higher gearing would drive significant saving under the CPM.
- **Long-term operational WACC:** Once construction on HSB is complete, the delivered assets will be operational, and therefore represent a relatively low level of risk to investors compared to assets under construction. Evidence from the OFTO regime has shown that long-term stable investments are attractive propositions to equity investors, which has driven the level of competition seen in the OFTO regime. CPM allows these low rates to be locked in for the full 25-year operational period, rather than the regular updating of debt and equity costs based on prevailing market conditions under RIIO.

1.22. Further detail on the quantification of the impact of these benefits can be found in Chapter 2 of this decision document.

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<sup>10</sup> CEPA's updated methodology for determining cost of capital during construction for offshore and interconnector developers has been published at the same time as this decision.

<sup>11</sup> This index captures the average cost of BB rated debt across the previous 10 years from the relevant iBoxx index

1.23. This document explains why we have decided to implement CPM following consideration of the various points raised through consultation responses. It also sets out the areas where we have made changes to the methodology for the CPM following consultation. In response to the points raised, we have carried out a thorough review of the methodology for setting the cost of capital for the HSB project. We have also carried out additional cross-checks of the cost of capital and rate of return (both for the project overall and across the construction and operational periods) to validate and quality assure the analysis.

1.24. The remainder of this document covers the following areas:

- Chapter 2: Our view on the key consultation responses and updated benefits analysis
- Chapter 3: The Competition Proxy Model for HSB
- Chapter 4: Next steps on implementation
- Appendix 1: Overview of Cost of Capital methodology
- Appendix 2: Updated Impact Assessment
- Appendix 3: Comparison of risk allocation: OFTO & HSB

## 2. Our view on the key consultation responses and updated benefits analysis

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### Chapter Summary

This chapter outlines our consideration of the key themes from responses to our minded-to consultation and the results of the updated analysis we have used to reach our decision that the CPM should be applied to HSB.

### Benefits of the Competition Proxy Model identified in minded-to consultation

2.1. We set out in January that we were minded to implement the CPM for HSB based on our expectation that it would unlock consumer savings. The level of saving was driven by the efficient financing of a new, separable and high-value project, which we do not consider is best reflected in the rate of return under the assumptions contained under the RIIO price control. Implementing a project-specific cost of capital through the CPM model during both the construction and operational period of the project ensures that:

- the historically low cost of debt currently available in the market is reflected in the charges consumers face for HSB;
- this low cost of debt can be locked in for the length of construction, and then the full 25-year operational period of the project;
- the allowed cost of capital during the operational phase of HSB appropriately reflects the low operational rates of return that have been determined through competitive processes (through our OFTO regime for operation of offshore electricity transmission assets); and
- the assumed ratio of debt to equity (“gearing”) during the construction and operational phase of HSB appropriately reflects the efficient levels expected to be delivered by the market for new, separable and high value projects.

### Responses to our minded-to consultation and our views

2.2. We received responses to our proposals from 14 parties.<sup>12</sup> These included 3 TOs (including separate consultant reports), two Distribution Network Operators (including WPD, whose network is impacted by the HSB project), two industry bodies, the developer of the HPC project (EDF), five potential SPV model investors and one local resident.

2.3. Aside from the responses from the TOs and DNOs, respondents showed support for measures designed to bring down costs and introduce the benefits of competition.

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<sup>12</sup> Non-confidential responses are available on our website: <https://www.ofgem.gov.uk/publications-and-updates/hinkley-seabank-minded-consultation-delivery-model>



2.4. Three potential SPV or CATO developers emphasised that the SPV model would likely deliver a greater saving than CPM, but were supportive of the view that CPM would deliver consumer savings relative to the SWW RIIO counterfactual. However, they did note the difficulties in replicating the outcome of a competitive process and therefore emphasised the importance of continuing the development of both the CATO and SPV models.

2.5. Each of the three TOs strongly opposed our proposal to implement the CPM for HSB, or for any other project. We set out below key themes from the TO responses.

### **That the implementation of CPM to the HSB project during the RIIO-T1 period constitutes an inappropriate reopening of the Price Control**

#### *TO views*

2.6. The TOs all said that the CPM is not a true competition. It should therefore not in their view be considered as within the scope of the competitive process that we identified would be considered for SWW projects during the RIIO-T1 period. The implementation of the CPM therefore represents a reopening of the price control. Ofgem has failed to demonstrate any breakdown in the existing SWW mechanism which would justify such a reopening. Ofgem has also failed to take into account the possible adverse effects associated with a reopening, e.g. reduced regulatory certainty or loss of investor confidence.

#### *Our views*

2.7. As part of our RIIO-T1 final proposals, we confirmed that all SWW projects, such as HSB, could be considered for delivery through a competitive process.

2.8. Since the beginning of the RIIO-T1 period, we have seen the demonstrable savings that competition can bring to the delivery of electricity transmission infrastructure. The OFTO regime is estimated to have saved consumers in the region of £700m to date. This has revealed market evidence that was not available at the time the RIIO-T1 price control was finalised.

2.9. We accept that the CPM is, by its very nature, a proxy for the result of a full competition, rather than a full competition. However, as set out in paragraphs 1.21 and 2.1, we consider that there is clear consumer benefit in moving away from SWW arrangements under RIIO for projects such as HSB, which meet the criteria for competition. We therefore do not consider it to be appropriate that consumers should be exposed to additional costs in the delivery of HSB that are no longer reflective of the efficient rates available in the markets.

2.10. As part of our RIIO-T1 final proposals in 2012 and consistently since then, we have confirmed that all SWW projects, such as HSB, could be considered for delivery through a competitive process. As such, investors and the wider market have been aware that returns on delivery of new, separable and high value projects like HSB may be determined differently and may be lower than the returns set at RIIO-T1. We have also set a general expectation that returns are likely to be lower during the RIIO-2 period. We consider that the returns we intend to set for HSB are fair and reflective of efficient market rates. We therefore don't consider that wider consumer

interests will be negatively impacted by our approach on HSB or to CPM and SPV models more generally.

**That the CPM has not been developed to a sufficient level of detail, and as a result, cannot be considered a viable investment opportunity**

*TO views*

2.11. Both NGET's and SHE Transmission's consultation responses were critical about the level of detail provided on how specific risks relating to HSB will be treated under the CPM. They suggest that this is not the approach that would be taken under a competitive regime, where risk allocations are set upfront with bidders bidding on this basis. NGET also considers that the lack of detail provided on the practicalities of the delivery model means that the project would be unlikely to gain an investment grade credit rating, making the cost of debt rates within our WACC methodology unachievable.

*Our view*

2.12. We consider that we have provided sufficient detail to justify the decision to apply CPM.

2.13. Both the CPM and SPV model have been informed through the previous work undertaken to develop the CATO framework, which built on the Integrated Transmission Planning and Regulation (ITPR) project and the follow up work to extend competition in Transmission (ECIT).

2.14. We consider that the risk allocation framework for CPM was set out clearly in the January 2018 minded-to consultation, building on the principles we set out in our August 2017 consultation. The minded-to consultation included a table, in appendix 4, comparing the risk allocation under HSB with that under the OFTO regime. We have updated that table and included it in Appendix 3 to this decision. We have provided further detail on the regulatory arrangements for CPM in chapter 3. We consider that this clearly shows that the allocations of risk under OFTO and CPM are very similar in many areas and are comparable overall. This supports applying a unified methodology to determining the WACC during construction across the CPM and offshore transmission, subject to minor changes to reflect differences in the duration and location of the construction activity, as set out later in this chapter and in the accompanying CEPA report. It also supports the use of the OFTO regime as a benchmark for the operational period of HSB, noting that the WACC will be derived from the methodology using inputs reflecting prevailing market conditions at that time.

2.15. While the allocations of risk are comparable overall, we note that it is not appropriate to apply identical regimes for allocating risk across the CPM and the OFTO regime. Under a full competition, bidders are exposed to competitive pressures and incentives, that we cannot fully replicate under the regulatory arrangements for the CPM (or under the construction period of the OFTO regime), that drive innovation and ultimately cost savings. When setting the allowed revenue under the CPM we are required to set the allowed cost of capital and review the capital and operational costs proposed by the TO for delivering the project in order to determine whether

these are economic and efficient. Under the OFTO regime, we do not need to review operational period costs as we can rely on the competition to ensure these costs reflect the market rates. Under the OFTO regime, similarly to the CPM, we do however need to review capital and financing costs relating to construction of the assets that are proposed by offshore developers. However, offshore developers face natural incentives to reduce costs during the construction period as they are required to pay the majority of these costs through charging arrangements for transmission. This is not the case for a TO. We have therefore included some mechanisms in the CPM, such as a sharing factor on controllable costs during construction, to incentivise efficient spend. Further details on risk allocation are set out in chapter 3 and Appendix 3.

2.16. We are not setting the final revenue allowances for HSB (including cost of capital rates) at this point in time. The current ranges represent the estimated upper and lower cost of capital that we expect based on the delivery model and risk allocation framework provided. We will carry out our detailed cost assessment process for HSB from mid August 2018 until early 2019. As part of this assessment, we will consider the final costs proposed through NGET's procurement process. We will also consider NGET's in-house pricing of project risks to determine the most appropriate treatment of risk through our upfront cost allowances and post construction review, in line with the risk framework that we have already set out. Once we have finalised that review, we will re-run the analysis using the methodology proposed by CEPA to adjust for contemporary market rates and consult on the final point within the cost of capital range that we will set for HSB. At that point, all parties, including NGET, potential investors and the credit rating agencies will have a clear understanding of the full detail of the delivery model, risk allocation and ex-ante cost allowances.

2.17. Later in this chapter we provide our view on why we consider the project would be able to gain an investment grade credit rating.

**That the bottom-up approach of setting a cost of capital for the construction and operational phases has not been sense-checked to show that it produces an overall level of project return that would be attractive to investors.**

#### *TO views*

2.18. In their reports on behalf of NGET, KPMG and Oxera set out a concern that the proposed bottom-up approach to setting the cost of capital for HSB did not reflect the way the project would be structured under a project finance approach (both sets of consultants assumed that the proposed cost of capital methodology for HSB was aimed at replicating a project finance funding approach). KPMG and Oxera said that the cost of capital ranges derived from the proposed methodology had not been cross-referenced against suitable top-down project finance benchmarks from comparable projects.

#### *Our view*

2.19. Based on the evidence before us, we are satisfied that the cost of capital rates proposed would provide an overall rate of return that would be in line with current market expectations.

2.20. We consider that if a project like HSB were to be subject to a full competitive process, there would be two approaches that bidders could follow for setting the efficient WACC:

1. One approach would be to use a top-down project financing approach which assumes that a single level of gearing and equity Internal Rate of Return (IRR) are set across the life of the project, with debt secured upfront from banks or capital markets.
2. Another approach would be to use a bottom-up approach which splits the project down into the construction and operational period to determine the cost of capital for these periods. This is the approach that we have adopted, based on CEPA's methodology, which ensures that the financing benchmarks fully reflect the risk profile of the relevant stages in the project's life.

2.21. We wouldn't expect either approach to drive higher or lower rates than the other although we accept that it is important to cross-check the approaches against each other to ensure that the rates represent viable and competitive financing proposals that accurately reflect the risks faced during the project's revenue period.

2.22. Setting the financing rate for HSB based on a fully top-down approach would require the identification of appropriate benchmarks that reflect the full characteristics of both the construction and operational periods of HSB. It would be challenging to identify a project that fully reflects the balance of risk and regulatory protections faced by HSB, whilst also matching the lengths of these periods and level of required expenditure.

2.23. Our bottom-up approach benefits from our ability to accurately reflect the level of risk and reward investors face during the operational period through the information from the comparable OFTO bids. It also allows us to ensure that the construction period WACC is appropriately aligned with the allowed return we set for the developers of offshore transmission and interconnectors during construction, which have comparable levels of regulatory protection during construction.

2.24. Since our minded-to consultation, we have been able to review a number of recent and upcoming large infrastructure projects (mainly in the transport sector). We consider that the cost of capital for the majority of comparable infrastructure projects delivered, or about to be delivered under a Public Finance Initiative (PFI) or Public-Private Partnerships (PPP) model fall within our proposed ranges for HSB, when the overall project equity return and WACC is considered.

2.25. We note that the majority of these projects are funded through significantly higher levels of gearing (across both construction and operations periods) than we propose overall for HSB, typically between 80-85% and sometimes up to and beyond 90%. We accept that, with lower gearing levels during construction and differing rates for the construction and operational periods, the financing arrangements proposed for HSB under the CPM may not look like a typical project finance deal. In terms of how this affects the cost of capital during construction, we consider that after the lower gearing during construction under the CPM is adjusted for, the resulting range of cost of equity based on a higher gearing level typical under a project finance approach, is in line with the rates seen in the project finance market.

We also consider that the cost of capital premium applied during the construction period relative to the operational period is again in line with market expectations.

2.26. Regardless of whether a bidder pursues a top-down, or bottom-up approach, they are likely to assume in their bids that the project will be refinanced at a point in the future at which the risk profile will change, typically after construction. In an efficient competition, bidders are driven to do this in order to ensure the resulting revenue stream for the project is competitive and also to take a share, with the relevant consumers, of the savings driven by the refinancing. Under the CPM, as there are no competing bidders, there is a reduced incentive on NGET to minimise the project revenue stream.

2.27. We will finalise the WACC for the operational period at the end of construction. This is designed to reflect a refinancing at that point. As set out in chapter 3, the rates for the operational period are to be set at the prevailing rates at the end of the construction period. This means that NGET is not taking the refinancing risk of rates changing significantly over the construction period. As NGET is not taking the risk, it would be inappropriate to reward it with a share of any refinancing savings, as would happen under a competitive process where bidders are taking on this risk.

**That the operational phase rates that have been benchmarked against the OFTO regime assume a project finance approach, which would incur additional costs.**

#### *TO views*

2.28. NGET consider that in order to quantify the benefits of the CPM, the additional costs associated with implementing a project finance approach need to be quantified as a cost of the model and funded by consumers. This reflects the fact that NGET consider that a project finance approach would have to be used in order to secure the sorts of rates seen in the OFTO regime (which, under the CPM, will apply for the HSB project).

#### *Our view*

2.29. We do not consider that our decision to implement the CPM for HSB requires NGET to fund the project through project finance. Whilst the CPM delivery model allows for the project to be financed in this way, it is for NGET to decide how it funds HSB. We do not consider that the cost of capital rates set out in this document are only achievable through project finance, nor do we consider that other delivery models would implicitly require a cross-subsidy from NGET's regulated asset base.

2.30. If NGET decided to finance HSB through project finance, we would consider it an oversimplification to say that it should be allowed to recover, from consumers, all costs that it incurs securing the finance. NGET would not face the same competitive pressure to secure the cheapest feasible financing as the OFTOs, so careful assessment of the efficiency of such costs will need to be carried out.

2.31. Notwithstanding the above, we recognise that, if NGET did choose to pursue a project finance solution for HSB, it may have to take specific additional actions that it would not normally take under its usual approach to financing and delivering a

project such as HSB, and we recognise that there may be costs associated with those actions. For example, NGET may choose to set up a Special Purpose Vehicle, under its parent company group, to deliver HSB, and there would be costs associated with doing so. Alternatively, it may choose to corporately finance the project in line with the approach it follows for its price control work.

2.32. As NGET may not project finance HSB (and may, therefore, not incur the sorts of costs described in the preceding paragraphs), we think it appropriate to consider the case for the costs of the type referred to in the preceding paragraphs as part of our project assessment which is currently expected to take place between August 2018 and early 2019. As part of our process for considering any such costs we would expect NGET to clearly justify why the costs are not already covered within the cost of capital, why they are necessary to deliver HSB and how they are economic and efficient.

2.33. We consider that our benefit case analysis set out later in this chapter, provides sufficient comfort that any reasonable additional costs will be recoverable and the CPM will still deliver a benefit relative to the RIIO counterfactual.

2.34. A detailed project finance model would be a key requirement for employing a project finance approach for delivering HSB. Such a model would be required to determine the final revenue allowance for the project and to demonstrate that the financial metrics, such as cover ratio for servicing the project debt, Debt Service Cover Ratio (DSCR), and the Loan Life Cover Ratio (LLCR) are high enough to secure lenders and attract a credit rating.

2.35. We contracted consultants Amberside to build a project finance model for the HSB project under CPM to cross-check, in light of consultation responses, that the estimated cost of capital ranges set out in this document, combined with assumptions around capital and operational costs based on data provided by NGET, can deliver a viable investment that meets the required ratios that are expected in project finance. If NGET indicates that it intends to fund HSB through project finance, we will use this model to ensure that the final annual revenue allowance is the most efficient for consumers.

2.36. If NGET chooses to project finance HSB, it may also wish to suggest adjustments to the regulatory arrangements for CPM in order to secure the best financing in the market. For example NGET may request a licence modification to enact a project-specific availability incentive for HSB similar to the project specific availability incentives we apply to OFTOs and have previously considered for the CATO regime. This would probably be to replace the Energy Not Supplied incentive arrangements that would normally apply for HSB and that are more appropriate if NGET does not project finance HSB. NGET may also ask us to make amendments to their regulatory arrangements to ensure that the allowed revenue for HSB is considered sufficiently separated, so as to provide additional confidence to investors in the project, or request an alternative approach to indexation within the revenue allowance under CPM. We are open to considering any such requests if NGET can robustly demonstrate the need and consumer benefit case for making such changes.

## **Whether the project is able to gain an investment grade credit rating**

### *TO views*

2.37. NGET stated that the HSB project as described in the minded-to consultation would not be able to gain an investment grade credit rating.

### *Our view*

2.38. An investment grade credit rating is an important indicator to lenders, and therefore is important in securing a low cost of debt. Generally it is difficult to get a definitive view from credit rating agencies on project-specific credit ratings until the full costs and risk allocations are fully identifiable and understood. This is because the full costs and risk allocation will have an impact on some of the key metrics used to determine ratings.

2.39. Where project finance structures are used to fund projects such as HSB, the level of risk faced by investors differs over the life of the project, whilst an upfront rating would tend to look across the life of the project. During construction the level of risk faced would normally be expected to be reasonably high, but reduce over time, and eventually lead to a very low risk asset towards the end of the revenue term. A recent study<sup>13</sup> on default and recovery rates for project finance bank loans by Moody's indicated that marginal annual project default rates are higher than for BBB-rated companies for the first 4-5 years, but then fall far below the A-rated company marginal default rates before the end of the tenth year.

2.40. We consider that in setting an overall rating across both periods, any slightly higher risk than BBB rating in the first 5 years should be more than offset by the 20-25 years of risk sitting lower than an A rating. This would suggest that an overall upfront rating of BBB is achievable, with this rating able to be improved upon as the project moves into the operational phase, supporting a blended BBB/A rating during the operational period.

2.41. We have also considered the HSB regulatory arrangements against the self-assessment methodology for Moody's. As well as this assessment, we have made comparisons against evidence from the OFTO regime. We expect that an annual Debt Service Cover Ratio for HSB under a project finance at 1.20 or above is achievable, with the Loan Life Cover at 1.24 or above. This does not compare unfavourably to the equivalent ratios achieved in the OFTO regime. OFTOs are required to maintain an investment grade credit rating, or else provide alternative credit arrangements. In Appendix 3 we have updated our relative comparison of risk between the CPM arrangements for HSB and the OFTO regime. We have used this, to help form our view on how HSB would be likely to perform against the credit rating criteria.

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<sup>13</sup> Default and recovery rates for project finance bank loans, 1983-2016, Infrastructure and project finance, Moody's, 5 March 2018

2.42. The key relevant criteria under Moody's guidance are:

- the reliability of the regulatory environment,
- That the reputation and track record of the parties delivering the works,
- that there is certainty around the recovery of efficient costs, the
- debt service cover ratio.

2.43. Against these points, the HSB projects performs well when compared to both the OFTOs, and other comparable project finance projects, such as PPP projects that also achieve an investment grade credit rating. For this reason we consider that the credit rating assumptions used to determine cost of debt within the CEPA cost of capital methodology are appropriate.

### **Comparability of benchmarks**

#### *TO views*

2.44. The TOs all raised concerns about the suitability of the benchmarks used in the cost of capital methodology for HSB. Specifically they suggested that the majority of the benchmarks used were taken from a more favourable financial climate ahead of the Brexit vote.

2.45. NGET also questioned why the Thames Tideway Tunnel project (TTT) was not considered as a benchmark, since this is a large infrastructure project in a regulatory regime that was competitively tendered.

#### *Our view*

2.46. We do not consider it right to say that the majority of benchmarks were taken in a more favourable financial climate. The benchmarked construction cost of capital range has been built up from a range of contemporary benchmarks, the majority of which come from after the Brexit vote.

2.47. The OFTO TR2 and TR3 benchmarks used for the operational period cost of capital are from before the Brexit vote. They have been cross-referenced against TR4 and TR5 information, which is more contemporary. Comparing the TR2 and TR3 to the TR4 and TR5 information does not show any notable shift in benchmarks between the period before and after the Brexit vote.

2.48. In terms of TTT, we agree that it has some relevance as a large infrastructure project subject to competition within a regulated sector. We have considered it in some depth; however, we do not consider it an appropriate direct benchmark as it relates to a much larger project (c£4-5bn), with arrangements that were put in place at a point at which higher returns were prevalent in the economy. It also has a different risk profile (eg the project involves a significant amount of tunneling in London).

2.49. The TTT bid WACC also covers a much shorter operational period, leading to higher level of overall risk and therefore a higher WACC overall than under the CPM.



The rates for most of the operational period will be set by Ofwat at periodic reviews following completion of construction.

**That there are material inconsistencies and errors within CEPA's analysis to derive indicative cost of capital rates for the HSB project**

2.50. Following consideration of all the responses received and detailed quality assurance of the methodology, CEPA have made the following adjustments to the rates identified in the minded-to consultation, which we agree with:

- **The low end of the cost of debt during construction has been increased from 1.85% to 2.70%.** This reflects two specific adjustments applicable for HSB, rather than the CPM in general.
  - Firstly, upon further reflection and consideration of responses, we think that the use of a 3-5 year debt tenor index as the lower end benchmark for the 5-year HSB construction timetable risks setting a cost of debt that is too low. We have therefore focused fully on the 5-7 year iBoxx index at the low and high end of the cost of debt range during construction.
  - Secondly, we recognise that a credit rating at A for a project of the complexity of HSB under an assumed project finance structure is likely to be a challenge. We have therefore focused the low and high ends of the cost of debt range during construction on the BBB-rated index.
- **The low end of the cost of equity during construction has been increased from 5.54% to 5.79% (post-tax nominal).** This is to adjust for the erroneous exclusion of share buy-backs from the setting of the current return on equity within CEPA's Dividend Growth Model (DGM). Further detail on this point can be found in section 6.2 of CEPA's updated report.
- **The high end of the cost of equity range during construction has been increased from 7.57% to 8.81% (post-tax nominal).** This adjustment is driven by two adjustments made following consideration of consultation responses and additional data checks and quality assurance carried out on CEPA's analysis.
  - Firstly, CEPA recognises that there is logic to NERA's argument (on behalf of SHE Transmission and SPT) that company stocks that are feeding into CEPA's equity beta analysis but are traded infrequently may be skewing the beta analysis downwards. CEPA has therefore excluded these comparators from its analysis. This significantly reduces the number of comparators, with a lot of the smaller companies removed from the analysis as a result. With this smaller, more homogenous sample set, CEPA considers NERA's approach of using a simple mean average across the companies in the sample as a more appropriate analytical approach.
  - Secondly, as set out in the updated CEPA report, the quality assurance process followed ahead of finalising this decision identified that the data that CEPA obtained from the Bloomberg indexes was not in line with its stated approach. It has now recalculated the equity beta, based on the correct data from Bloomberg.

**Additional key challenges from NGET on methodology for setting the HSB cost of capital ranges**

*The dividend growth model (DGM) developed by CEPA is not consistent with the model used by the Bank of England (BoE)*

2.51. The approach undertaken by CEPA differs from the Bank of England (BoE) model, but is consistent with the approach undertaken by Europe Economics and PwC as part of the cost of capital work for Ofwat's PR19 price control.

2.52. The BoE model is designed to capture variation in risk-free rates across different maturities and reflect variation in long-term growth expectations to inform policy decisions. It uses analyst forecasts to do this. As noted by Ofwat in their PR19 final methodology, this is one of the reasons for it producing a higher TMR estimate. Ofwat refer to the 2014 CMA NIE Final Determination<sup>14</sup> that contains references to a large body of evidence around analyst forecasts being subject to optimism bias.

2.53. We note that real dividend growth for the UK has been below real UK economic growth for both short-term and very long-term time horizons, as noted in the CMA NIE Final Determination. The CMA also noted empirical support for expecting long-run growth in dividends to be below potential economic growth.

*Dividend assumption within the DGM used is based on UK growth despite UK companies having 70% of earnings (and so dividends) from outside the UK*

2.54. We focus on UK GDP growth rates, rather than a mix of different countries' growth rates as we are looking to set the cost of capital for an asset generating returns in the UK. This approach is consistent with Ofwat's approach in their Final Methodology for PR19 and we consider this to be more appropriate than using international growth rates. We have used evidence on the UK economy for gilts. Using international evidence to create a worldwide return is difficult and would be less appropriate for the basis of setting the cost of capital.

*DGM is generally used by regulators as a sense check only, not primary source given their subjectivity*

2.55. Past estimates of TMR by regulators generally relate to price control determinations. These determinations often seek to estimate return expectations over a relatively long timeframe (for example, a report by the UKRN for the RIIO-2 price control advocated taking at least a ten year perspective). Over such timeframes and for a portfolio of new and existing investments there is scope for returns to revert towards historical averages, and hence historic evidence has traditionally been seen as the primary source.

2.56. Recent price control determinations, however, have begun to place more weight on adjusted historic data and on forward-looking evidence. This shift recognises that unadjusted historic evidence is unlikely to be representative of current conditions. We consider that in the case of one-off investments with a short, clearly defined timeframe such as the HSB construction phase, unadjusted historic evidence is likely to be even less relevant. We therefore place more weight on

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<sup>14</sup> <https://www.gov.uk/cma-cases/northern-ireland-electricity-price-determination>

forward-looking evidence compared with both historical determinations and with more recent determinations that take a longer term perspective.

2.57. Nevertheless, dividend growth models remain only part of the evidence base used to form our judgement. We have also referred to historic ex-post and ex-ante evidence, particularly in relation to the upper end of the range.

*Total Market Return (TMR) range significantly different to indicative RIIO-T2 range despite relative stability of TMR and most construction is during RIIO-T2. Why would an investor invest in HSB if they can get a higher return in RIIO-2 just because an economic assumption is different not because risk varies?*

2.58. As referenced in the paragraph above, there are clear reasons why for a one-off investment, the contemporary returns in the market are more relevant than the longer-term historical average. Notwithstanding this, the ranges for RIIO-2 and HSB currently overlap. Additionally, we consider that investors would mainly be interested in the overall cost of equity relative to the risk faced for the investment. Our cross-checks involving whole-life returns suggest our range is appropriate.

*It is not credible for the equity return in construction to be lower than in operations, despite the differential in gearing.*

2.59. Following the updates to the cost of capital rates identified in paragraph 2.50, the high end of the cost of equity range during construction is higher than the high end of the cost of equity during the operational period.

2.60. Irrespective of this point, we consider that a lower cost of equity during constructions relative to operational period remains credible and we have sought to ensure that the expected whole-life returns from the project are appropriate. The lower gearing during construction, and shorter investment horizon offset the additional risk associated with construction in comparison to the operational period.

*Unlevered operational risk premium on equity appears higher than on debt. This is incorrect/inconsistent with the relative priorities of claims on cash flows and assets in the event of financial distress and default.*

2.61. The analysis presented by the respondent shows the unlevered risk premium on equity being 1-32bps lower than debt, based on an interpretation of current evidence. While debt does have greater priority claims on cash flows, there are also other differences that can affect relative pricing of debt and equity – for example, equity returns factor in a control premium and upside potential. We do not think that small differences in the premia suggest the approach needs to be changed.

2.62. The underlying calculation used by the respondent involves an adjustment from 80-85% gearing to 0% gearing – this is a material change in gearing that could test the limits of the theoretical relationship posed between required returns and gearing. We have used real-world, competitive data from the OFTO regime, which has been shown to be consistent with debt costs used in the analysis. This provides us comfort that our approach is appropriate.

*The observed nominal equity IRR from OFTOs has been incorrectly adjusted to derive RPI stripped real equity returns. Equally, those returns reflect additional advantages not available to HSB such as aggressive tax and terminal value assumptions*

2.63. Our understanding of this criticism is that it relates to the way in which the RPI-real equity return has been derived from nominal cost of equity returns. At the low end of the operational cost of equity range the real rate has been derived from applying a current long-term RPI forecast of 3.4% to a nominal cost of equity benchmark from TR2 and TR3 evidence. NGET's view is that we have applied a higher current RPI assumption to the nominal cost of equity benchmark than was forecasted at the time these equity returns were set (2.8%-3%). NGET considers that this results in the real rates appearing artificially low.

2.64. We have looked at both long-dated breakeven inflation and inflation swaps over the period when TR2 and TR3 projects were tendered. The inflation rates observed are commensurate with the 3.0-3.4% range adopted for RPI inflation.

2.65. Should NGET ultimately choose to fund HSB through a project finance approach, we do not see that there is anything specific in the arrangements for OFTOs that could not be replicated under the Competition Proxy model. On terminal value, Ofgem has stated in bid documentation that the assets will have no regulatory asset value at the end of the revenue term and any adjustment would therefore be speculative.

*The additional debt costs (cost of carry, transaction cost) are understated in the current proposals*

2.66. CEPA's updated report sets out the specific analysis it has undertaken to determine its view on transaction costs and cost of carry. With the cost of debt range having changed for the construction period and consideration of points made by respondents, the low estimate for transaction costs has increased by 15bps. CEPA's report also takes into account the scope investors are likely to have to minimise cost of carry.

## **Updates to our minded-to consultation benefits analysis**

2.67. In our minded-to consultation we tested CEPA's benchmarks for determining cost of capital against the cost of capital we might expect if the project remained within the RIIO SWW regime. As well as the changes to the cost of capital methodology in response to consultation responses set out in paragraph 2.50, we have also made a number of further adjustments to our analysis in light of consultation responses and to reflect up-to-date information.

*Updating the RIIO counterfactual*

2.68. Our minded-to consultation used the midpoint of what was then the expected ranges that Ofwat had consulted on for PR19 as an indicative estimate of the counterfactual treatment under RIIO. We now have an additional year of outturn cost of capital information from the Price Control Financial Model (PCFM) for the RIIO-T1 period. Following publication of our RIIO-2 framework consultation in March, we also have more up-to-date indicative information to use as the basis for the post-RIIO-T1

aspects of our RIIO counterfactual. Accordingly, we have adjusted the counterfactual in the following ways:

- For the counterfactual cost of debt under RIIO we have used the latest relevant input data from the latest Price Control Financial Model (PCFM) for the RIIO-T1 period. For the RIIO-T2 period and beyond we have applied a forward looking forecast of the 10-year trailing average cost of debt index that currently feeds into NGET's RIIO-T1 out across the full length of the 45-year RIIO depreciation period.
- For the counterfactual cost of equity under RIIO, we have again used the latest relevant input data from the latest Price Control Financial Model (PCFM) for the RIIO-T1 period, 7.00%. As the cost of equity for the RIIO-2 period is yet to be determined, we have run our analysis with both the top and bottom of the indicative RIIO-2 equity range applied during the years of RIIO-T2 (2021/22 to 2025/26) which was consulted on in March 2018 as part of the RIIO-2 framework consultation. These figures are 5.08% and 3.07% respectively.
- Our updated analysis also includes a counterfactual cost of equity view of future RIIO price controls beyond RIIO-2. During this period, for cost of equity our analysis has been run assuming that the cost of equity could remain at the top or bottom of the indicative RIIO-2 range. In practice we might expect that the current low observed market costs of equity (and debt) may increase over time (or at least fluctuate significantly over time), leading to a potential upwards adjustment of the RIIO cost of capital at some point in the future. However, at this point in time, there is limited evidence on which to assume that it won't remain in line with the RIIO-2 range in the long-term.
- We have assumed the current notional NGET gearing under the RIIO-T1 price control throughout the counterfactual.

**2.69. These RIIO counterfactual figures should not be read as any confirmation of the rates applicable for RIIO-2** (or subsequent RIIO periods) – we have used them solely as a means of ensuring that our benefits case is sufficiently conservative to give comfort that the implementation of the CPM is likely to provide benefits for consumers once the final cost of capital is determined.

*Using the midpoint of the HSB CPM range*

2.70. We have simplified the presentation of our benefits analysis to compare the above RIIO counterfactual to the midpoint of the HSB CPM range. This comparison of the mid-point of the HSB CPM against two counterfactuals that sit at either end of the RIIO-2 equity ranges is a logical and appropriately conservative means of estimating the likely level of consumer savings that can be realised through the application of CPM for HSB.

2.71. In line with the approach followed in our minded-to consultation, we have also included a sensitivity that compares the RIIO counterfactuals against the top and bottom of the HSB cost of capital range under CPM. This is covered in more detail in paragraphs 2.75 to 2.77.

*Point at which the Operational WACC is set*

2.72. As set out in Chapter 3, we have decided, following consideration of consultation responses, to finalise the operational cost of capital for HSB at the end of construction, rather than locking it in upfront (ie before construction). This is because it protects both consumers and NGET from windfall gains or losses if market conditions change significantly over the course of the construction period. The rates we used in the analysis presented in January included a 50bps increase, at both the top and bottom of the operational period cost of equity and debt, for the estimated cost of locking in operational rates for HSB for the duration of the construction period. We have removed these increases from our updated analysis, as they are no longer relevant. We would expect that long-term trends affecting the underlying rates on which the RIIO counterfactual is based will be reflected to an equivalent level in the rates used under the CPM to set the operational cost of capital. This gives us sufficient comfort that the benefit case for CPM is not sensitive to this factor.

2.73. The table below sets out the updated analysis on which our indicative estimate of consumer savings (£50-100m) is based:

	HSB mid-point under CPM	RIIO counterfactual High	RIIO counterfactual Low
Cost of equity during construction (post tax RPI real)	4.18%	RIIO-T1: 7.00% RIIO-T2: 5.08%	RIIO-T1: 7.00% RIIO-T2: 3.07%
Cost of equity during operation (post tax RPI real)	4.41% <sup>15</sup>	RIIO-T2 and onwards: 5.08%	RIIO-T2 and onwards: 3.07%
Cost of debt during construction (RPI real)	-0.32%	10-year rolling average (actual and forecast)	10-year rolling average (actual and forecast)

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<sup>15</sup> Cost of Equity is higher in the operational period than construction due to the higher gearing and the longer investment horizon of 25 years.

Cost of debt during operation (RPI real)	-0.07%	10-year rolling average (actual and forecast)	10-year rolling average (actual and forecast)
Construction gearing	37.5%	60%	60%
Operational gearing	82.5%	60%	60%
Construction WACC (vanilla RPI real)	2.49%	T1: 4.02%-4.23%  T2: 2.43%-2.57%	T1: 4.02%-4.23%  T2: 1.63%- 1.76%
Operational WACC (vanilla RPI real)	0.71%	T2 onwards: 2.43%- 2.60%	T2 onwards: 1.63%- 1.79%
Indicative gap to CPM (NPV)		£102m	£53m

2.74. As reflected in paragraph 2.68, there is inherent uncertainty around future regulatory arrangements over the period where revenue will be recovered for HSB. For this reason **we present the above indicative savings figure for CPM for illustrative purposes only**. Nevertheless, we consider that these illustrative figures represent, in both absolute and percentage terms, a clear indication that the implementation of the CPM for HSB is likely to be in the interests of consumers.

### **Sensitivity testing on capital and operational costs**

#### *Sensitivity to position within the cost of capital ranges*

2.75. We have sought to further stress test our analysis by also comparing the same RIIO counterfactuals against the high and low end of the Cost of Capital ranges for HSB. The results are set out in the table below:

Cost of Debt	Cost of equity RIIO-T2	Cost of equity post RIIO-T2	HSB CPM low	HSB CPM midpoint	HSB CPM high
Rolling avg.	High (5.08%)	High (5.08%)	£141m	£102m	£58m

Rolling avg.	Low (3.07%)	Low (3.07%)	£92m	£53m	£8m
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2.76. The results in the table above indicate that even in the unlikely event that the cost of equity remains at 3.07% indefinitely over the next 50 years of RIIO price controls, and we pick a point at the very top end of the cost of capital ranges for construction and operations for HSB, the CPM would still deliver savings to the consumer for the HSB project compared to the RIIO counterfactual.

2.77. In practice, we do not consider that such a set of circumstances will occur, as this would require us to set an operational cost of capital for HSB that is, and remains higher than the rest of NGET's price controls over the same period. Given the comparative risk profiles between the operational period of HSB, and NGET's wider portfolio of assets under the price control arrangements, we do not consider it logical to assume that this is likely to happen.

*Sensitivity to additional construction and operational cost driven by the implementation of the CPM for HSB*

2.78. In our minded-to consultation we set out our view that there was the potential for capital and operational cost savings to be delivered through the use of the SPV or CPM. NGET's consultation response argued that there are additional costs associated with implementing a project finance approach, which include increased upfront capital costs to provide additional certainty for investors through fixed price terms with contractors where appropriate.

2.79. We do not consider that structuring the contracts for delivering HSB to reflect a project financing structure would necessarily lead to increased outturn capital costs. This is because whilst a more turnkey EPC contracting approach may increase costs upfront, as long as risks are appropriately allocated, the outturn cost impact should be comparable to other contracting approaches. As set out in Chapter 3, the CPM includes a Post Construction Review (PCR). This allows for low probability, high impact risks, such as extreme weather, to be accounted for at the end of construction if they occur, rather than being conservatively priced in contracts upfront.

2.80. Having said this, following consideration of the responses received, we do not consider that it is appropriate for our analysis to assume that CPM will drive a reduction in capital and operational project costs – although we consider that it remains possible. Instead, our analysis assumes capital and operational costs would remain the same under CPM as under SWW.

2.81. As set out in paragraphs 2.76 and 2.77, we do not consider that a scenario in which cost of equity remains at 3.07% indefinitely over the next 50 years of RIIO price controls, and we pick a point at the very top end of the cost of capital ranges for construction and operations for HSB, is likely to occur.

2.82. In conclusion, we consider that indicative savings from implementing CPM for HSB across credible scenarios are sufficiently large that any efficient additional costs associated with implementing a project finance approach would not undermine the benefit case.



## 3. The Competition Proxy Model for HSB

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### Chapter Summary

This chapter confirms the regulatory arrangements for the CPM. It outlines the design and operation of the CPM across both the construction and operational periods of the HSB project.

3.1. Under the CPM, NGET will receive a project-specific HSB revenue allowance. This revenue allowance will be calculated from appropriate costs of capital and capital and operational cost allowances.

3.2. The CPM involves setting a largely project-specific set of regulatory arrangements for HSB to cover a five-year construction period and a 25-year operational period (rather than setting them for a portfolio of assets for the period of a price control). To reflect this, we have aligned certain key regulatory aspects of the CPM with the existing OFTO and Interconnector regimes, which similarly provide regulatory arrangements for specific projects. For example, we intend to allow project-specific protections during the operational period for the effects of events outside of the TO's control. This aligns with the OFTO regime and reflects the sort of arrangements that would be in place under a competitive regime for HSB.

3.3. However, as set out in paragraph 2.15, we have decided that the CPM arrangements should not fully replicate the OFTO and Interconnector regulatory regimes due to the different incentives on parties. As set out in this chapter, we intend to apply a sharing factor to the underspend or efficient overspend of capital costs. This will ensure that NGET remains incentivised to minimise construction costs under CPM and will replicate some of the incentives that naturally apply to offshore developers and interconnectors.

3.4. Appendix 3 sets out the comparative allocation of risks between the OFTO regime and the CPM for HSB. This has been updated from the version published in our minded-to consultation following consideration of consultation responses.

3.5. As set out in paragraph 2.36, we are open to considering adjustments to the regulatory arrangements for CPM set out in this chapter to align more fully with a project financing approach for HSB. For example, NGET could suggest the creation of a project-specific availability incentive for HSB or an alternative approach to indexation within the revenue allowance under CPM. However, NGET would need to robustly demonstrate the need and consumer benefit case for making such changes.

### Financing arrangements

3.6. The financing arrangements we intend to apply for determining the revenue for the HSB project under the CPM will assume that the full construction debt is raised upfront and then drawn upon as expenditure is incurred by NGET. During the construction period, the allowed cost of capital (as determined through the cost of capital methodology) will be applied to the annual allowed expenditure as determined through our Project Assessment process described later in this chapter. As set out in chapter 2, where NGET decides to fund the project through a project finance approach, we will consider the efficient costs that will enable this through our Project Assessment process. As part of our process for considering any such costs we

would expect NGET to clearly justify why these costs are necessary to deliver HSB and how those costs are economic and efficient.

3.7. The full construction period capital costs allowance will be uplifted by the annual construction cost of capital to determine a total capital cost at the end of construction. This capital cost value, minus revenue recovered during construction, will be recovered by NGET over the following 25-year operational period with the operational cost of capital applied.

3.8. We will also set an annual operating cost allowance that will apply during the operational period. We intend to add this annual allowance to the annual recovery of the construction capital cost value across the full 25-year revenue term. The annual revenue allowance during the operational period will be based on this total amount including returns distributed evenly on an NPV neutral basis across the full revenue term. At the end of the 25-year operating period, the HSB project will enter NGET's price control Regulatory Asset Value (RAV) at a value of zero.

3.9. We consider that, under a competitive delivery model, a 25-year revenue period is currently the optimum period over which the full value of the HSB project should be recovered from consumers. This view was based on market analysis when developing the SPV model and supported by various potential SPV investors who said, in their responses to our August and January consultations, that a recovery period beyond 25-30 years of operation would be significantly less attractive to lenders.

3.10. A 25-year operational term is shorter than the 45-year period over which costs are currently recovered under RIIO. Some respondents to both our August and January consultations questioned whether a shorter revenue period would create an intergenerational transfer by increasing costs to existing consumers whilst future consumers benefit from cost savings. Following the updating of the inputs into our analysis in Chapter 2, we recognise that there is a possibility that consumers may end up paying marginally more on an annual basis during the 25-year operational period of CPM relative to the RIIO counterfactual. Ultimately, consumers will benefit significantly overall, and will pay significantly less during the construction period, and also after the operational period. We do not accept that the limited impact on intergenerational equity transfer that CPM will have is sufficiently material to justify not pursuing the overall level of savings available.

### **Setting the allowed cost of capital rates**

3.11. We consider that it is most appropriate to fix the allowed construction cost of capital at Project Assessment but only set an indicative cost of capital for the operational period at that time – using the cost of capital methodology published alongside this document to set both. We will then fix the cost of capital for the operational period at the completion of construction – also in line with the accompanying methodology. This will ensure the cost of capital reflects market costs at the time and protects NGET from refinancing risk, as set out in paragraph 2.27.

### **Allowed revenue during the construction period**

3.12. Given the extended construction period for HSB, which is expected to be approximately five years, we consider that there are consumer benefits in allowing

NGET to recover a revenue allowance during the construction period. This is informed by our previous work on the CATO regime, which suggested that for projects with a construction period of at least 4-5 years, revenue during construction can help reduce the cost of capital by reducing the cash-flow limitations on the developer. A majority of respondents to our minded-to consultation also supported the approach of allowing some revenue during construction.

3.13. As set out in our minded-to consultation, the revenue provided during construction will cover only the allowed cost of debt, based on the upfront costs set at our Project Assessment. This allows debt to be serviced during construction, but retains delivery incentives.

### **Adjustments for inflation**

3.14. Consistent with the principles under RIIO-T1 and under the OFTO regime, the revenue allowance for HSB will be adjusted for inflation. In RIIO-T1 and in OFTOs to date the inflationary adjustment is tied to the Retail Price Index (RPI). Since the Government now uses the Consumer Price Index (CPI) to measure inflation, other regulators, such as Ofwat, have proposed future shifts (or partial shifts) towards the use of a version of CPI to track future adjustments for inflation. In our minded-to consultation we proposed to align the approach taken for HSB with the wider approach that is ultimately taken forward for RIIO-T2 and OFTOs. We will confirm the use of CPI or RPI as part of our Project Assessment process.

## **Project Assessment, annual reporting and Post-Construction Review**

3.15. The cost assessment process under the CPM will have three stages. It will consist of:

- 3.15.1. a Project Assessment before construction begins,
- 3.15.2. annual reporting during the construction period, and
- 3.15.3. a Post-Construction Review when construction is completed.

3.16. This section outlines the detail of each of those stages and provides information on how the sharing factor will be applied.

### **Project Assessment (PA)**

3.17. Under the CPM we intend to formally review and set cost allowances at PA. Capital cost allowances will be finalised at the PA, subject to the outcome of the annual reporting process and Post-Construction Review (PCR), which are explained later in this chapter. Provisional allowances for operating costs will also be set at the PA, before being finalised at the PCR. We currently expect NGET to present their PA submission to Ofgem in August 2018. The submission should outline NGET's anticipated capital and operational costs.

3.18. Capital costs will be formed of controllable firm costs that have been agreed (either incurred or forecasted), and risk and contingency costs that are estimates.

3.19. We will also determine the exact value of the sharing factor at the PA. This will be contingent on the risk costs that NGET submits as part of the PA. Paragraph 3.35 outlines how we intend to apply the sharing factor.

*Assessment of the controllable (firm) costs*

3.20. Our assessment of the firm capital costs will include the following elements:

- 3.20.1. consideration of the suitability of the tender processes and subsequent award of contracts;
- 3.20.2. use of benchmarking, where applicable, as a signpost exercise to establish the efficiency of the costs; and
- 3.20.3. detailed review of the submitted firm capital costs on an overall and component basis.

3.21. As part of annual reporting and the PCR, we will assess the actual spend in relation to firm costs to ensure that actual spend is in line with the cost allowances set at PA.

*Assessment of uncertain risk and contingency costs*

3.22. We expect that the HSB project will have areas of cost uncertainty relating to both risk-related expenditure or contingency costs. The uncertain nature of these cost areas is one of the reasons why the capital allowance set at the PA will be reviewed annually and at the PCR.

3.23. At PA we will also identify risk costs which we do not consider should be funded up front. This could include risks that are unlikely to occur, but that would be likely to have a large impact, if they did occur. It could also include other risks that are difficult or inefficient to quantify up front. These "qualifying risks" will be treated as part of the PCR.

3.24. As part of annual reporting and the PCR, we will assess the actual spend in relation to these costs and update the allowances accordingly.

*Assessment of operational period costs*

3.25. We will set an indicative operational cost allowance at PA based on an efficiency assessment of NGET's proposals. This will include an assessment of NGET proposed inspection and maintenance strategy for the assets once built.

**Annual Reporting**

3.26. NGET will submit annual reports during the construction phase. The annual submission will include evidence of the expenditure during construction and detail about any costs that have varied from the allowances set at the PA. These costs will

need to be well-evidenced and well-documented in the same reporting year in which they occur.

3.27. We expect NGET's annual report submission to be evidence-based. NGET will be responsible for proving that decisions taken in response to such cost variations were efficient.

3.28. Furthermore the link between these cost variations and the risk profile changes should be noted within the annual report submission.

### **Post-Construction Review (PCR)**

3.29. The PCR will serve three main functions:

3.29.1. assess whether any qualifying risks set out in paragraph 3.23 from the PA have eventuated, and, if so, establish the efficient level of funding under the terms of the CPM (the costs associated with these risks will not be subject to the sharing factor);

3.29.2. reconcile all of the remaining actual costs incurred during construction, which will have been reviewed by Ofgem during the annual reporting, against the allowances set at PA (the sharing factor referred to in paragraph 3.35 will be applied to underspends and overspends on each individual cost item); and

3.29.3. finalise the ongoing operational costs for the project.

3.30. We consider that this approach to setting cost allowances for the project will ensure that NGET is appropriately incentivised to minimise costs of the kind it can control, whilst avoiding NGET receiving windfall gains or suffering losses from risks it cannot control.

3.31. The result of the PCR will be an update to cost allowances in NGET's licence, which will represent the values for the 25-year operational period of HSB.

3.32. We would expect to start the PCR process at the earlier of:

3.32.1. 90-95% spend committed;

3.32.2. one year after the delivery date for HSB set out in NGET's licence; or

3.32.3. at any point during construction when it becomes apparent that HSB will be materially delayed due to factors which are beyond NGET's control.

3.33. If qualifying risks eventuate after PCR submission by NGET but before we reach a decision, we might allow inclusion of the associated cost impacts into the PCR up to a certain cut off point. This cut off point will be specified as part of the PA, to ensure that there is no unreasonable delay to the PCR process.

3.34. It is possible that some of the remaining construction works might be exposed to certain risks beyond the conclusion of the PCR. We would consider providing an ex-ante allowance for managing these risks as part of the PCR, but only where NGET is able to provide sufficient evidence that a material level of risk remains, and that it remains outside of its control.

### **The Sharing Factor**

3.35. As per paragraph 3.27, NGET will share underspend or efficient overspend of the cost allowances that we set at PA with consumers. The sharing factor on these costs will be applicable to each specific cost item as opposed to the total risk pot, and will be assessed on a case-by-case basis. This will retain the incentive on NGET to drive down the construction costs. Under CPM, NGET would not face the same natural commercial pressure to limit its cost exposure as offshore windfarm or interconnector developers.

3.36. The sharing factor will not be applicable to expenditure associated with the qualifying risk costs set out in paragraph 3.23. For those events NGET will receive full funding for the costs providing that those events are eligible for funding under the PCR and the costs are efficiently incurred.

3.37. The exact value of the sharing factor will be determined at the PA. Whilst our starting expectation is that it will be set at a similar level to currently in place under RIIO-T1, broadly 50%, the final rate will be contingent on the proportion of the total costs that NGET submits as part of the PA that we determine should only be funded through the PCR rather than via an ex-ante allowance.

### **Treatment of late delivery**

3.38. NGET's licence will include a specified date by which the HSB project must be delivered. If NGET does not deliver HSB by this date, in line with our usual processes, we would consider whether any late delivery against this date constituted a breach of the licence condition and whether to consider enforcement action. In considering whether this is the case or not, we would follow our usual processes and policies for enforcement.<sup>16</sup>

3.39. Irrespective of whether any delay is treated as a breach of licence requirements, we propose that additional costs incurred during a delay will not be reflected in the revenue allowance during construction. Subject to the arrangements set out in the preceding section, only unavoidable costs incurred during delays will be reflected in the revenue stream and recovered over the 25-year operational period. Where it can be evidenced by NGET that a construction delay was unavoidable and outside of its control, NGET would be able to earn the allowed construction cost of capital during the length of the delay.

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<sup>16</sup> A copy of the guidelines can be found here:  
[https://www.ofgem.gov.uk/system/files/docs/2016/12/enforcement\\_guidelines.pdf](https://www.ofgem.gov.uk/system/files/docs/2016/12/enforcement_guidelines.pdf)

3.40. As set out in paragraph 3.32, the latest point at which the PCR will be triggered is one year following the delivery date for HSB set out in NGET's licence. This will provide an opportunity to assess the impact of any delays and ensure that where delays have not been caused by NGET, that it remains no better or worse off as a result of the delay.

3.41. Our proposed treatment of late delivery is directly comparable to the approach undertaken in the Cap and Floor Interconnector regime.

## **Arrangements during the operational period**

### **Opex**

3.42. As set out in paragraph 3.25, we will set provisional operational costs for the 25-year revenue term at the PA. This will provide NGET with a degree of confidence as to what cost allowance to expect during the operational period. We intend to finalise the operational cost allowance at the PCR unless we determine from evidence provided by NGET that those costs can be clearly and accurately determined at the PA.

### **Incentives**

3.43. Of the current incentives in place under RIIO, we expect that the following would be applicable to the operational period of HSB as follows:

- Reliability incentive (Energy Not Supplied)
- Stakeholder satisfaction output
- Incentive in respect of SF6
- Network Innovation Allowance
- Network Innovation Competition

3.44. Under the status quo SWW arrangements, the HSB assets are likely to contribute towards NGET's overall performance across their portfolio of assets, against the first three incentives above. These three incentives in combination reflect a comparable balance of risk/reward with the operational incentives that apply to OFTOs. We therefore consider that under the CPM it would be appropriate for the HSB assets to contribute towards the first three incentives above.

3.45. Under those arrangements the annual revenue allowances for HSB would be included in the calculation of maximum up and downside exposure to these incentives during the operational period of the HSB project. Performance against these incentives would be reported and rewarded or penalised as part of NGET's overall price control arrangements. It is possible that there may be material changes to the RIIO incentives that apply to HSB before we finalise the operational cost of capital and cost allowances for HSB at the end of construction. If this happens, we will make adjustments at the PCR to how those incentives apply to HSB to ensure they continue to reflect a comparable balance of risk/reward with the operational incentives that apply to OFTOs.

3.46. Under standard project finance arrangements projects are typically subject to specific operational period performance incentives that can be directly measured for that project. As set out in paragraph 2.36, if NGET finances HSB through project

finance, it may request a licence modification for HSB to allow the application of project-specific operational period performance incentives for HSB. This might include for example a project-specific availability incentive for HSB. In considering any such request we would want to ensure that any project-specific incentives for HSB were directly measurable and reflected a comparable balance of risk/reward with the operational incentives that apply to OFTOs.

### **Cost reopeners**

3.47. Similar to OFTOs and Interconnectors, the CPM will include a cost reopener mechanism to compensate NGET for low probability, high impact events that NGET cannot control (eg force majeure events) that trigger a sufficient increase in opex costs. The exact threshold we set for reopening the opex costs will depend upon the quantum and nature of the opex costs identified at PA, and will likely be proportionate to the threshold set under the OFTO regime. NGET would be able to make a claim for any efficiently incurred additional costs beyond the relevant threshold where a qualifying event occurs during the operational period.

3.48. In addition, in line with the OFTO regime, the CPM for HSB will provide protection against certain unanticipated changes in law. Under these arrangements NGET would be able to claim for material increases in costs associated with specific changes in law that impact directly on the cost it incurs on HSB.

### **Additional capex requirements during the operational period**

3.49. During the revenue term it is possible that the HSB assets in place will need to be upgraded to accommodate additional capacity or connections. Where any upgrade is demonstrated to be needed, and the upgrade is forecast to meet the competition criteria (ie the upgrade is new, separable and high value), we expect the regulatory treatment will mirror the prevailing arrangements in place at the time. This could mean the CATO, SPV model or the CPM are implemented to deliver the upgrade.

3.50. Where such a network upgrade is demonstrated to be needed but does not meet the criteria for competition, we propose setting a cost allowance for the work based on prevailing RIIO arrangements and market conditions at the time the cost allowance is set.

### **Allowance for tax liabilities**

3.51. The CPM will include a project-specific tax pass through mechanism for the tax liability incurred by NGET through the construction and operation of HSB.

### **Identifying HSB costs**

3.52. It will be important to ensure that costs associated with HSB assets incurred during the construction and operational periods are identifiable as separate from the remainder of RIIO-T1 and any future price controls. This will ensure that costs are appropriately captured as relating to HSB, rather than the wider RIIO portfolio. Where it is efficient to fund HSB-specific operational costs through an allocation of cost from a wider recorded cost covering work within RIIO, we will expect NGET to propose and adhere to a clear and consistent allocation approach.



### **Treatment of work that doesn't meet the criteria for competition**

3.53. In line with our minded-to decision, the conductor replacement works that make up part of the HSB project should be included by NGET in it's RIIO-T2 business plan, and will be funded through the RIIO price control framework.

## 4. Next steps for implementation

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4.1. Based on NGET's currently proposed timescales for submitting cost estimates, we anticipate running our Project Assessment process for HSB from August 2018 to early 2019.

4.2. As part of that process we will:

- review NGET's capital and operational cost estimates for HSB;
- consult on and finalise our view of appropriate ex-ante cost allowances;
- consult on and finalise which areas of capital and operational cost will be subject to the Post Construction Review; and
- re-run the analysis in the methodology for setting the cost of capital for HSB to adjust for contemporary market rates and consult on the final point within the cost of capital range that we will set for HSB.

4.3. In parallel, we will develop and consult on licence modifications to enact the CPM as a regulatory delivery model. We anticipate consulting on the licence modifications from late autumn 2018. In early 2019 we will also consult on modifications to NGET's licence to reflect its cost allowances for HSB.

## Appendices

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### Index

Appendix	Name of Appendix	Page Number
1	Overview of Cost of Capital methodology	43
2	Final Impact Assessment template	45
3	Comparison of risk allocation: OFTO & HSB	50

## Appendix 1 – Overview of Cost of Capital methodology

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### **Methodology and indicative results**

1.1. CEPA has produced two separate cost of capital ranges for HSB – one for the construction phase and one for the operational phase. This approach reflects the fact that material differences in risk between these two phases have an effect on estimated cost of debt, equity and levels of gearing. The approach also reflects the different data available to CEPA concerning each phase. Direct market derived comparator rates, from OFTO bids, are available for the operational period. The construction phase requires a build-up of input assumptions from available market data, which reflects the broad way in which Ofgem has determined the allowed 'Interest During Construction' (IDC) allowances for offshore transmission and interconnector project developers since 2009.

#### *Cost of Debt*

1.2. CEPA's cost of debt ranges for HSB are based on the observed non-financial corporate debt costs revealed in short-term BBB-rated debt indexes within the iBoxx index during construction. The difference between the top and bottom of this range is based on the range of potential transaction costs associated with securing the debt. A longer-term blend of A and BBB-rated debt indexes from iBoxx is used to set the cost of debt during the operational period. As set out in its report, CEPA's approach assumes that short-term debt is raised upfront to cover the construction period. It assumes that a further tranche of longer-term lower-risk debt is raised to cover the full 25-year operational period.

1.3. The cost of debt during construction is based on a 5-7 year debt tenor which reflects the length of construction. The cost of debt during operation is based on the 10+ year index, which has an average debt tenor that aligns well with the 25 operational period.

1.4. We consider that the proposed indexes are the appropriate comparators for the rates that will be available to NGET within the market for raising debt for the HSB project.

#### *Cost of Equity*

1.5. Equity beta is a key aspect of the calculation of the cost of equity as it quantifies the level of risk faced in comparison to the rest of the economy. Central to CEPA's estimate of HSB's equity beta during construction is their choice of comparator companies. CEPA uses a combination of listed engineering and construction companies and regulated networks as comparators. Under CEPA's approach this equity beta is combined with an estimate of overall expected equity market returns in the UK to set the cost of equity. CEPA's report explains that for a short-term investment, such as for the construction period of HSB, it considers forward-looking

modelling<sup>17</sup>, cross-checked against long-term historical trends and investor survey data of expected equity returns, is more appropriate than relying solely on longer-term historical average returns.

1.6. As HSB is a construction project that has specific regulatory protections, we agree with CEPA's proposal to use both construction companies and regulated networks to set its equity beta range for the construction period. In the context of the short-term investment horizon of the construction period for HSB, we agree with CEPA's proposed use of forward-looking evidence. Under a competitive process it is likely that this is the sort of evidence which bidders would factor in for determining an appropriate return on equity.

1.7. During the operational period, CEPA's key cost of equity consideration is the inherent level of risk faced by HSB in comparison to OFTOs. Following a comparative assessment of the risks faced by operators under the OFTO regime and our proposed SPV and CPM, CEPA considers that the inherent level of risk faced in the operation of HSB will be comparable to that faced by OFTOs. Therefore, as detailed in its report, CEPA's cost of equity range for the operational period is benchmarked against the level observed in the second and third tender rounds of the OFTO regime.

1.8. Having carried out a comparison of the risk allocation in place under the OFTO regime compared to our proposals for HSB, we agree with CEPA that the successful OFTO bids are an appropriate reference point for setting the cost of equity for the operational period of HSB. A summary of our review can be found in Appendix 3.

#### *Level of Gearing*

1.9. CEPA considers that evidence from the OFTO regime clearly supports the view that a higher level of gearing than the 60% assumed in RIIO-T1 is achievable in the operating period of HSB. It also considers that evidence from specific regulated infrastructure construction projects suggests that, whilst the gearing during construction is likely to be lower than during operation, a level far beyond 65% has been achieved in other regulated infrastructure projects. This is a significantly higher level of gearing than seen in the construction and engineering companies used in the cost of equity analysis. CEPA has concluded that regulatory protections allow for a higher level of gearing to be achieved than is observed in the comparator set. It has therefore selected a point between the higher gearing levels seen in regulated projects and the observed level from the equity comparator set in order to set a level of gearing during construction of 37.5%.

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<sup>17</sup> In CEPA's report, this approach is referred to as the Dividend Growth Model (DGM)

## Appendix 2 –Final Impact Assessment template

<p><b>Title:</b> Final Hinkley – Seabank Delivery Model Impact Assessment</p> <p><b>Directorate:</b> Systems and Networks <b>Team:</b> New Transmission Investment</p> <p><b>Associated documents:</b> N/A</p> <p><b>Coverage:</b> Full coverage. This IA considers the full costs and regulatory implications of Ofgem’s decision to apply the Competition Proxy Model (CPM) to determine funding to deliver the Hinkley – Seabank (HSB) electricity transmission link.</p>	<b>Impact Assessment (IA)</b>
	<b>Type of measure:</b> Regulatory model
	<b>Type of IA:</b> Qualified under Section 5A Utilities Act 2000.
	<b>Contact for enquiries:</b> James Norman, Head of New Transmission Investment, Systems and Networks <a href="mailto:NTIMailbox@ofgem.gov.uk">NTIMailbox@ofgem.gov.uk</a>

The Ofgem Impact Assessment (IA) template is used to present the information and analysis that underpins our decisions in a consistent format. It includes a summary section and then more detailed evidence/analysis. In the case of HSB, most of the evidence and analysis is already within the main document, so to avoid unnecessary duplication we link to specific sections where appropriate.

### Summary: intervention and options

In late August 2017 we consulted<sup>18</sup> on our view that introducing competition into the delivery of HSB, or replicating the outcomes of doing so, could unlock significant savings for consumers in comparison to the status quo Strategic Wider Works (SWW) approach under RIIO. We identified two alternative models that we considered able to deliver such savings:

1. **Special Purpose Vehicle (SPV) model:** NGET runs a competition for the financing, delivery and operation of the HSB project through a SPV
2. **Competition Proxy model (CPM):** NGET delivers the project, but Ofgem sets a regulatory model and revenue terms intended to reflect the outcome of an efficient competitive process for the financing, construction and operation of the project.

Following further policy development and a review of the responses to our August consultation, we consulted in January 2018 on a minded-to position that delivering HSB through the CPM would be the best option to secure value for consumers.

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<sup>18</sup> <https://www.ofgem.gov.uk/publications-and-updates/hinkley-seabank-consultation-final-needs-case-and-potential-delivery-models>

This IA outlines the benefits, and potential costs, of our decision to apply the CPM to HSB, relative to delivering HSB under the status quo RIIO SWW arrangements. It also considers the impact of the CPM compared to the potential consumer outcomes that the SPV model may have delivered. We consider that chapters 2 and 3 of this decision document provide a thorough analysis of the impacts of implementing the CPM, and as such we have only covered aspects in this IA that are not covered by the main document.

**What is the problem under consideration? Why is Ofgem intervention necessary?**

We consider that there is a clear economic and technical needs case for the HSB project.

We consider that HSB meets our new, separable and high value criteria for competition and that there is a strong case to consider competitive delivery models, or models that seek to replicate the outcomes of competition, for HSB.

In June 2017 we announced<sup>19</sup> a pause to the development of the Competitively Appointed Transmission Owner (CATO) regime. We considered the merits of alternate models intended to deliver the benefits of competition: SPV and the CPM. Later this summer we will publish a detailed Impact Assessment which will review the merits of implementing the SPV and CPM delivery models more widely and not on a project specific basis.

As outlined in paragraph 2.73 and 2.74 of this document, our analysis indicates that pursuing the CPM for HSB will deliver greater consumer benefit than the status quo RIIO (SWW) arrangements. As set out in paragraph 1.21 of this document, these benefits are driven primarily by lower costs of financing HSB than under the status quo RIIO (SWW) arrangements.

**What are the policy objectives and intended effects including the effect on Ofgem's Strategic Outcomes?<sup>20</sup>**

Consistent with Ofgem's Strategic Outcomes and regulatory stances, the main outcome of our decision to implement CPM would be to lower bills for energy consumers. As referred to further down in this appendix, we consider that the CPM could save consumers between £50m and £100m relative to if the project was delivered under RIIO. These figures vary depending on the RIIO counterfactual used.

**What are the policy options that have been considered, including any alternatives to regulation? Please justify the preferred option.**

Option 1: SWW - This represents the 'status quo' or 'do nothing' option and would involve NGET receiving revenue for delivering HSB under the prevailing RIIO arrangements.

Option 2: SPV - NGET run a tender to appoint an SPV to finance and deliver HSB. We have elected not to pursue this option for HSB because there was significant uncertainty as to whether NGET would ensure that the SPV arrangements are set up and

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<sup>19</sup> <https://www.ofgem.gov.uk/publications-and-updates/update-extending-competition-transmission>

<sup>20</sup> <https://www.ofgem.gov.uk/ofgem-publications/92187/corporatestrategy.pdf>

implemented in the optimum manner to ensure that the full range of savings are delivered by the model.

Option 3: CPM - Ofgem utilises benchmarks from the OFTO and Interconnector regimes, alongside other market information, to set an HSB-specific cost of capital that we consider could have been achieved through an efficient competition. Capital and operational costs are confirmed following a post construction review. These are combined to determine an allowed revenue for delivering HSB over the period of its construction and 25 years of operation.

**Preferred option - Monetised impacts (£m)**

<b>Business Impact Target Qualifying Provision</b>	Non-Qualifying (Competition)
<b>Business Impact Target (EANDCB)</b>	Not relevant
<b>Net Benefit to Ofgem Consumer</b>	£50m - £100m
<b>Wider Benefits/Costs for Society</b>	N/A
<p><b>How the Net Benefit was monetised</b>            £50-100m represents our indicative view of the level of savings.</p> <p>As explained in paragraph 2.75- 2.77 we have further stressed tested our analysis by including additional sensitivities in which we compare the high end of the HSB cost of capital to a continually low RIIO counterfactual. The results of our wider analysis are shown in table A2.1 later in this IA. Again, as set out in paragraphs 2.75- 2.77, we do not consider the scenario in which we apply the high end of the HSB cost of capital range against the low RIIO counterfactual is a credible scenario, but have included the results for completeness.</p> <p>We carried out an NPV comparisons of the revenue allowances under the two approaches using the Green Book specified 3.5% and 3% discount rate. NPV is calculated in 2016/17 prices covering the period 2016 – 2051. The base date for discounting was 2016. This reflects NGET’s view that 2016 represents the first construction spend on the project and the period over which the costs would currently be depreciated over under RIIO.</p>	

**Preferred Option - Hard to Monetise Impacts**

**Describe any hard to monetise impacts, including mid-term strategic and long-term sustainability factors following Ofgem IA guidance.**

A potential positive impact is that the approaches developed for setting the cost of capital on HSB could be utilised on future new, separable and high value projects. There is a 'learning by doing' benefit, which may be significant when considering the future treatment of other onshore transmission projects that meet the criteria for competition and come forward in the current and future price controls.

A potential unintended impact is that investors view the cost of capital assumptions for HSB as an indicator for what to expect in RIIO-2. We don't consider this to be very likely because central to our decision is the conclusion that

a one-off investment such as for the HSB project would specifically be able to achieve more efficient financing than under RIIO for the reasons set out in paragraphs 1.21 of this document.

It is possible that not pursuing the SPV option on this project will disappoint potential bidders and create a reluctance to engage on further development of the SPV model. However, given the consistent active engagement that we've seen from potential bidders during the development of both the CATO and SPV models, we don't anticipate this being an issue, particularly given our ongoing work to further develop the SPV model. Our intention is for NGET (SO) to continue to highlight, as part of its annual Network Options Assessment (NOA) report, future projects that meet the criteria for competition – this should help maintain interest in a potential pipeline of future projects.

**Key assumptions/sensitivities/risks**

The benefits saving in our analysis is being driven by the comparative cost of capital used under CPM relative to the RIIO counterfactual.

CEPA's work on developing a methodology for determining the cost of capital for HSB and other new high value investments has informed the core of the assumptions regarding the financing benefits of the SPV and the CPM that we've used in our own analysis of the benefits of the respective models. More information on this can be found in the CEPA report, published as a subsidiary document to this decision document.

Paragraph 1.21 sets out our justification for why we consider that CPM allows for new, separable, high value projects, such as HSB, to be financed in a more efficient manner than would be possible under the RIIO counterfactual.

There is some risk that the CPM could raise costs for consumers in the long run by reducing regulatory confidence. However, we consider that this risk is mitigated by the fact that we have been clear that the CPM could only apply to projects that meet the criteria for competition, not across the rest of RIIO. Investors will have been aware that during the RIIO-T1, projects that meet the criteria for competition would not necessarily be funded through the RIIO price control.

<b>Will the policy be reviewed?</b> No	<b>If applicable, set review date:</b> N/A
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<b>Is this proposal in scope of the Public Sector Equality Duty?</b>	No
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**Summary table**

The table below outlines the financial benefits delivered by CPM under a range of potential scenarios. The scenarios differ both in relation to where in the HSB under CPM range we ultimately set the cost of capital and in relation to where the cost of capital is set under RIIO.

*Table A2.1*



Cost of Debt	Cost of equity RIIO-T2	Cost of equity post RIIO-T2	HSB CPM low	HSB CPM midpoint	HSB CPM high
Rolling avg.	High (5.08%)	High (5.08%)	£141m	£102m	£58m
Rolling avg.	Low (3.07%)	Low (3.07%)	£92m	£53m	£8m

## Appendix 3 – Comparison of risk allocation: OFTO & HSB

Risk	Description	Allocation in OFTO	Allocation in CPM	Comparison
<b>Construction risk</b>	Cost overruns during construction, or failure to complete the assets on time (or at all)	<p><b>Risk is predominantly borne by the windfarm developer under the generator build option</b>, whereby the windfarm developer has responsibility for constructing and commissioning the assets and can't export power (and earn revenue) before assets are constructed.</p> <p>Developer is allowed to recover efficiently incurred costs associated with uncontrollable events.</p> <p>Interest During Construction (IDC) recovered at the end of construction/ start of operation through the transfer value paid by the acquiring OFTO.</p>	<p><b>Construction and delivery risk remains largely with TO, but with sharing factor for underspend and efficient overspend.</b> Costs outside the licensee's control (eg flooding and force majeure events during construction) will be subject to an ex-post review with no sharing factor.</p> <p>Construction cost of capital recovered during period of any delay where that delay is outside the control of NGET.</p> <p><b>Some revenue is recovered during construction.</b> Full revenue (including IDC uplifts) is recovered over the 25 year operational period.</p>	<p><b>CPM is lower risk.</b></p> <p>CPM risk is lower than offshore due to working in lower risk onshore environment, revenue during construction, lower delay risk (TO doesn't face same extent of financial penalty as offshore developer if delivery is not on time), and sharing factor for underspend and efficient overspend. In addition for the low probability, high impact events the sharing factor does not apply.</p>
<b>Demand risk</b>	<p>Generating station shuts down or generates lower amount of power than expected.</p> <p>Higher or lower than expected demand for transmission capacity</p>	<p><b>So long as the OFTO makes the transmission assets available the OFTO is entitled to its revenue Stream</b> (subject to an availability incentive – see later), and is not exposed to the performance of the generator.</p> <p>During the revenue term the OFTO is under no obligation to offer terms to undertake additional capex to meet higher demand if the capex would exceed 20% of the original investment.</p> <p>No stranding risk is borne by the OFTO. If generator shuts down before end of OFTO revenue period, revenues for transmission services continue to be paid.</p>	<p><b>So long as TO makes the transmission assets available</b> (subject to an Energy Not Supplied incentive - see later) <b>it is entitled to its revenue stream</b> and is not exposed to the performance of the generator.</p> <p>During the revenue term any additional works that meet competition criteria would be funded/delivered under prevailing arrangements at the time (eg CATO, SPV model, CPM).</p> <p>During the revenue term any additional works that don't meet competition criteria would be funded under prevailing RIIO arrangements</p>	<p><b>Broadly the same.</b></p> <p>CPM risk is slightly lower due to no requirement to deliver additional capacity requirements under original CPM rates.</p>

			No stranding risk borne by TO. If generator shuts down before end of CPM revenue period, revenues for transmission services continue to be paid.	
<b>Operational risk</b>	Unexpected asset failure due to technical reasons that increase cost	<p><b>Risk is borne by the OFTO, and a failure to make assets available may result in penalties</b> under incentive mechanism (up to 10% of base revenue p.a.).</p> <p><b>The OFTO can mitigate this risk through maintenance contracts and insurance</b>, passing off some of the risk to other parties. Due diligence on assets prior to acquisition in the generator build model allows the OFTO to price into its bid or take the risk on more uncertain elements of the assets.</p> <p><b>The exceptional events mechanism manages risks which impact availability</b> and can be demonstrably proved to be outside the OFTO's reasonable control.</p>	<p><b>Risk is borne by TO, and a failure to supply electricity may result in penalties under the Energy Not Supplied (ENS) incentive (3% of revenue p.a downside risk)</b></p> <p><b>TO can mitigate this risk through maintenance contracts and insurance</b>, passing off some of the risk to other parties.</p> <p><b>Bespoke exceptional events reopener mirroring ENS for HSB assets in TO licence</b> for events demonstrably proved to be outside of TO's control.</p>	<p><b>Broadly the same.</b></p> <p>CPM risk is slightly lower due to TO's lower level of revenue exposure to ENS incentive, although this is mitigated to some extent by exposure to other incentives (eg SF6) not faced by OFTOs – albeit these other incentives are less likely to apply to new assets.</p> <p>OFTO risk is perhaps slightly lower due to potential to outperform availability incentive (+5% p.a.) compared to ENS under CPM, leading to increased bonuses.</p>
	An unexpected increase in the cost of operating and maintaining the transmission infrastructure	<p><b>Risk borne by the OFTO that higher costs may decrease equity returns.</b></p> <p><b>The OFTO can mitigate this risk through medium term (5–10 year) (or possibly longer) fixed price O&amp;M contracts</b> with credible third party contractors.</p> <p><b>Linking contracts to RPI inflation</b>, as with the tender revenue stream, can also help to mitigate the risk of above inflation cost increases.</p>	<p><b>Risk borne by TO that higher costs may decrease equity returns.</b></p> <p><b>TO can mitigate this risk through medium term fixed price O&amp;M contracts or risk diversified across wider network assets.</b></p> <p><b>Option for TO to index contracts</b> to align with indexation of their HSB-specific revenue stream.</p>	<p><b>Broadly the same</b></p> <p>CPM risk is slightly higher due to 25 year revenue period in CPM (5 years longer than OFTO) but this risk is offset by OFTO working in higher risk offshore environment.</p>
<b>Force majeure during operational period</b>	Force majeure events lead to increased costs and decreased	<b>The OFTO licence includes an Income Adjusting Event condition which protects the OFTO against force majeure</b> , albeit only for costs above a specified threshold level	<b>There will be a reopener in the TO licence to reflect impact of high-impact occurrences outside of TO's control</b> , subject to a materiality threshold proportionate to	<b>Broadly the same.</b>

	availability	(which is dependent on project size and currently varies between £500,000 and £1 million).	the equivalent threshold set for OFTOs.	
<b>Counterparty risk</b>	Risk of non-receipt of TRS	<b>TRS is received from NETSO, a ring fenced subsidiary of National Grid</b> , which is regulated by Ofgem and with an investment grade credit rating. NETSO receives its funding from all users of the electricity system.	<b>TO recovers revenue directly through licence from NETSO, a ring fenced subsidiary of National Grid</b> , which is regulated by Ofgem and with an investment grade credit rating. NETSO receives its funding from all users of the electricity system.	<b>The same.</b>
<b>Low inflation (or deflation) risk</b>	Lower than expected inflation reduces interest coverage ratios	<b>The OFTO bears the risk of inflation being lower than expected.</b> If revenue does not increase as quickly as expected, this may be detrimental to interest cover and other debt service ratios.  Ofgem allows bidders to choose the proportion of their TRS that will be linked to inflation, which reduces the need for bidders to employ hedging agreements with financial intermediaries.  In practice all OFTOs have chosen 100% indexation to date, however all OFTO's put in place hedging arrangements to protect themselves from inflation risk.	<b>The revenue is fully indexed during the revenue term.</b>	<b>The same.</b>
<b>Financing costs</b>	Interest payable by OFTO may increase or decrease over project life	<b>The OFTO bears the risk of financing costs being higher than expected.</b>  <b>Refinancing:</b> Debt refinancing gain sharing factor at 50% (with consumers) (equity IRR used as discount rate for calculation of gain)	<b>Financing rates are benchmarked by Ofgem</b> Assumed debt refinancing is factored into reduction in rate for operational period.  Ability for TO to outperform debt costs without any gain sharing mechanism with consumers.	<b>Broadly the same.</b>  CPM risk is different due to delivery party not having control over rates. Risk under CPM could be lower if TO is able to outperform benchmarked rates; or risk could be higher under CPM if rates are set too low.
<b>Tax risk</b>	Tax payable is higher or lower than expected over project life	<b>Risk borne by OFTO:</b> Any unfavourable change in tax legislation over the 20-year period is for the OFTO's account (and any favourable change, for the OFTO's	<b>Tax allowance/ pass through supported by tax trigger events:</b> Reopener for changes in corporate tax rates or capital allowance rates and/ or changes in HMRC.	<b>CPM risk is lower</b> due to having protections against tax changes.

		benefit). There is no mechanism for the TRS to be adjusted to reflect changes in tax legislation.	interpretation/ accounting approaches or legal precedent.	
<b>Change of Law</b>	Change in law imposes additional (or reduces) costs of operator	<b>Licence includes a clause which means some pre-specified changes in law, such as in respect of decommissioning obligations, are passed-through to the TRS.</b> General changes in law, where not deemed an Income Adjusting Event, are borne by OFTO.	<b>CPM will provide protection against certain unanticipated changes in law. TO would be able to claim for material increases in costs associated with specific changes in law that impact directly on the cost it incurs.</b>	<b>Broadly the same.</b>
<b>Change in government policy</b>	Government decide that generation triggering the connection is no longer a high priority	The OFTO is protected against this risk because a licence has been issued with a fixed revenue stream for 20 years. The licence can be revoked only if the OFTO is found to be in breach of its licence conditions.	TO is protected against this risk because the licence will include a fixed revenue stream for 25 years. The licence can be revoked only if NGET is found to be in breach of its licence conditions.	<b>The same.</b>